The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XXXVII. CHICAGO, ILLINOIS, SEPTEMBER 7, 1901. No. 10.

Original Articles.

THE PRACTICE OF OBSTETRICS.*

E. GUSTAV ZINKE, M.D.

Professor of Obstetrics and Midwifery, Medical College of Ohio, Medical Department University of Cincinnati; Obstetrician and Gynecologist to German Hospital; Obstetrician to Ohio Maternity Hospital.

CINCINNATI, OHIO.

If the question is asked: Is there room for improvement in the general practice of obstetrics, it is answered in various ways.

Those physicians and surgeons, whether obstetricians or not, who have studied carefully the character of the present mode of the practice of midwifery, have but one answer: The daily practice of obstetrics is not what it ought to be for mother, child nor the physician.

Some of the general practitioners, the so-called "lucky fellows," who have attended a large number of obstetric cases without a single sad experience (*sic*) will shrug their shoulders and say: Were it not for the great loss of time connected with waiting upon women pregnant, in labor and confinement, and the poor pay, we should be perfectly satisfied.

There are others in the rank and file of the profession, especially in the country districts, who claim: We are trying to do entirely too much in the practice of obstetrics. Only a few of the labor cases make trouble if permitted to take care of themselves.

Others cry out: Abolish the midwives. They are a source of mischief in the management of pregnancy, labor and confinement.

It is evident, from these statements and my own personal experience, that the present practice of obstetrics is not as satisfactory as it might be to any one class of practitioners of medicine and surgery generally, and the accoucheur especially; and certainly not so far as the average results regarding the mother and child is concerned.

What is the remedy? The writer belongs to those who believe that the practice of obstetrics can and ought to be improved in many ways. The principal questions which concern us are not so much those of time, pay and midwives, but rather of how and where can the best result be obtained.

Antisepsis and asepsis in the management of labor are of inestimable value; many lives have been saved by a thorough appreciation and application of the same. The mechanism of labor, the art of diagnosis of the attitude of the fetus *in utero*, and the art of taking the measurements of the maternal pelvis are well understood. Complications resulting from maternal diseases or deformities, or from malpositions or disease of the fetus, may be recognized in ample time. But what does it avail us when all of these, though scientifically applied, promptly determined and correctly interpreted, can not be properly carried out, successfully executed, or effectually met, because of the patient's surroundings? On this account, the knowledge and skill which we may possess and the care which we are ready to bestow upon the patient, are much reduced in value, and invalidism, disease and sometimes death follow where naught but health and happiness ought to prevail.

The present custom is to attend women in confinement at their homes. Only a small percentage is delivered in hospitals established and equipped for that purpose. By far the great majority of the women who go to maternities do so because they have no home. A few, very few, because they have not the means to pay for the services of a physician (or midwife) and nurse.

During the 26 years of my professional career, of which 15 were devoted to general practice, and 11 almost exclusively to the teaching and practice of obstetrics and diseases of women, I have had ample opportunities to observe and experience the difficulties attending the delivery of women at their homes and learn to appreciate the great advantages which lying-in hospitals possess over the long-established, deep-rooted but old and unscientific custom of confinements at home.

The most luxurious furnished and most favorably situated home, provided with all the modern sanitary arrangements, is not superior in safety to the most humble but well prepared and properly conducted maternity hospital! The reasons for this assertion are apparent, numerous and convincing.

For the sake of illustration let me divide the community into three, more or less, distinct classes:

1. The wealthy who can afford, or do not hesitate at least, to spend money lavishly when it concerns their personal safety and comfort.

2. The middle class, who live in their own modest little home, or, perhaps, in a so-called flat, or, as we sometimes find them, in a well-kept tenement house.

3. The absolutely poor, indifferent and uneducated, who, in the majority of instances, either because of necessity, carelessness or ignorance, occupy but one little, poorly-ventilated room, in a miserable hovel, located in a neighborhood defiled with filth and disease.

Class 1. By reason of their wealth and a comfortable home this class is enabled to engage the most competent and efficient service, an experienced obstetrician and well-trained nurses. One or even two rooms of the capacious residence may be set aside and fitted up like an operating or private room in a maternity. The nurses render everything (the patient and themselves included) as clean, neat and aseptic as it can possibly be done in the best hospital. The physician not only secures a sterilizer, but provides himself with all possible

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

instruments, dressings and medicines in order to meet promptly and, if possible, successfully any complication or emergency that may arise immediately before, during or after the event.

It would seem that, under the conditions and surroundings just described, in conjunction with the prospect of a handsome fee, it would be a great pleasure and an extreme satisfaction to practice the art of midwifery. No doubt it is so in some instances. But you know that the obstetrician, who wants to provide for every emergency and accident that may befall a woman in her confinement, has a great task on hand. And, forsooth, after he has brought upon the scene everything that might possibly be needed, he may discover to his great dismay, if not intense mortification, as well as the serious disadvantage of his patient, that he has forgotten the very thing he wanted most—though simple and insignificant it may be.

There is an impression abroad that the modern obstetrician puts his patient to much needless trouble, because of his extensive preparations. This is, apparently, supported by the daily observation that women pass through confinements with apparent safety to themselves and the newly born, in many instances without the aid of a skilled and experienced accoucheur, a trained nurse, and sometimes even with or without the help of a midwife. The above impression is fur her supported by the occasional loss of a mother or child, or both, in spite of all previous preparations, the presence of talented assistance and the greatest possible care during the labor. There are even "good" (?) doctors who counsel against the taking along any kind of instrument "for fear of using the same." These gentlemen always smile significantly when they see a young, well-trained and conscientious physician go to all the so-called "needless" trouble of preparing a woman and her surroundings for the approaching confinement.

Class 2. Nearly all of what has been said of the wealthy holds good of the middle class. There will be, however, but one nurse, if any, and she may or may not have had a systematic training; quite often she has no training at all. There will be no room especially set aside and prepared for the confinement. The most liberal and thorough use of antisepsis will only result in an imperfect aseptic condition of the patient, her bed and surroundings. The doctor's remuneration is very moderate, as a rule; sometimes it is distressingly small and occasionally it is not paid at all. This is especially true if all is not satisfactory. At any rate, in every instance the management of the case is handicapped from the beginning; its conduct becomes difficult and dangerous to the patient and rests like a heavy burden upon the obstetrician in charge. Let unforeseen complications arise or accidents occur, the embarrassment which follows because of the inability to meet them properly and promptly is often great and, not infrequently, leads from bad to worse and may result in serious injury, disease and even death. The obstetrician has labored hard. He is worn out by long-continued physical effort and prolonged mental strain in his anxious attempt to bring the case to a successful termination. He retires from the scene fully conscious that he has done his duty. He also knows that there will be no reward for his work, aye, that he will be damned if the result be an unfortunate one.

Class 3. The absolute poor, indifferent and uneducated, as may well be imagined, fare worse by far than the two preceding classes. The wonder is that any of the mothers escape the evil consequences of lack of proper attention, the dangers of sepsis, and that so many of the children survive, live and grow up.

As a rule there is little or no provision made for the care of the mother and the arrival of the infant. The assistance obtained is often seriously wanting in promptness and earnestness as well as knowledge and experience. Of late years, in the larger cities at least, outdoor obstetric clinics have been established; they are supported by colleges and maternity societies. Through these clinics the condition of the patients belonging to this class and who avail themselves of the advantages of those institutions, is somewhat improved, but far from tolerable. A recent graduate or senior student of medicine and sometimes a trained nurse is the help furnished these women. They are provided with antiseptics, sterilized dressings, etc.; but when difficulties and serious complications are threatened or do occur, the patients are promptly transferred to a hospital. It is because of this that the records of the outdoor clinics remain good, while the records of the hospitals correspondingly suffer. When a transfer to the hospital is refused, or the condition of the patient forbids removal, the officers of the clinic are called in to direct the future management of the case, and, sometimes after a great deal of hard work and plenty of time, the patient recovers. To what extent will always remain a question.

Probably the best evidence that the practice of obstetrics is not what it ought to be lies in the fact that, while we have plenty of teachers of obstetrics, we have not, in the ordinary meaning of the term, a single specialist in this department here or elsewhere. Why? 1, because there is not money enough in the practice of obstetrics to maintain a man and his family respectably; 2, because the work is hard and full of responsibility; and 3, it is often associated with unmerited blame and unjust criticism, to say nothing of the loss of time, sleep and irregular hours generally. Is there anything that upsets the busy practitioner's work more than a case of labor? This is the rule. The exceptions are few. There is, so far as my observation goes, no satisfaction in the private practice of midwifery as it is conducted at the present day.

From what has been said it would seem that little, very little, can be offered in favor of attending women (rich or poor) in the act of birth at their homes. The only objection to hospital deliveries that I have thus far heard and deserving of an answer is: "There is more danger of sepsis in the hospital than at home, because septic cases are constantly sent to the hospitals." It is true that septic cases are—and they should be—admitted to maternity hospitals. Why? Because there women thus affected have the best opportunity to recover. This alone speaks volumes in favor of hospitals. It is so because the necessary provisions have been made for the accommodation of these cases. Not only are the septic patients kept separate and by themselves, but superior facilities exist—or should exist—to treat these cases not only effectually and successfully, but to prevent a spread of the malady at the same time. More than that: the disease should be actually stamped out, if everything is done that can be done with that object in view.

The argument that women love their homes and abhor the idea of going to a hospital for the purpose of confinement is only a sentiment begotten of custom and deserves no special refutation. Let women once appreciate that the hospital is the safest place for them

to pass through the ordeal of labor, they will seek it of their own accord.

There was a time, not so very many years ago, when the men who argued in favor of hospitals as the proper place for the performance of a major surgical operation of any kind, were looked upon as unreasonable, selfish, short-sighted individuals; they were regarded as men prompted by greedy motives, nothing else.

How many capital operations are performed to-day at the houses of patients? Very few, indeed! At present men, women and children are taken to hospitals, not only for the purpose of having dangerous operations performed upon them, but they are taken there for trifling injuries and diseases. The results are good; better than before. Consequently everybody is satisfied. Objections are seldom heard.

Will anybody argue that the act of giving birth to a child is not a capital operation? Or an event free from special danger? Who will claim that every woman pregnant is hopeful and cheerful, because she knows she will pass through her labor safely and unharmed? Who is there that can always predict with certainty that there will be no complications and, if there are, that he can meet them with as much success as in a hospital equipped for this specific purpose?

A simple ovariotomy does not carry with it so grave an element of danger as does a normal case of labor. Yet every abdominal surgeon knows that, when he performs ovariotomy, though simple in its aspects, at the house of his patient, he does so at a greater risk than at the hospital. The care is far greater and the responsibility he assumes much more grave when he operates at the house. At the hospital he has but to say what he intends to do and when he wants to do it. Everything is then prepared for him. He has no care of minor details and he can concentrate his whole mind upon the work to be performed. Not so when he operates at the home of the patient. Here he must himself supervise all the details necessary for the success of the operation and the recovery of his patient; and still he runs the risk that, just prior to, during or immediately after the operation, something very important is wanting or has been left undone.

This is never more true than in a labor case attended at the patient's home; and yet, both the women and the great majority of physicians object (some of them earnestly and persistently) to maternity hospitals. Why? Because the former are not accustomed to it; the latter are apprehensive that they may lose a stronghold upon their patrons through which and through whom they believe to obtain the good will and confidence of the one and other families.

The prejudice against hospital deliveries can be as easily overcome, in my opinion, as the antipathy which existed in the past against the hospital for any kind of treatment, medicinal or surgical.

I have had occasion to attend ladies in confinements who were suddenly taken in labor while traveling, and who had no other choice than to go to a hospital. Some of them had had previous, others subsequent experiences of the same kind at their homes. All were unanimous in their expressions that the hospital is the better and the most convenient place for confinement purposes. It, too, has been my satisfaction of late not only to deliver the wives of prominent citizens at the hospital, but also the wives of some of my professional brethren. In every instance the difference between home and hospital was keenly appreciated and the verdict invariably in favor of the latter.

The fear that the family physician will suffer by the change and that the young physician will be deprived of a legitimate opportunity to "obtain practice," is imaginary, not real. Maternity hospitals should be so conducted that they would please the humblest as well as the most fastidious. Let the patient and her friends make their own selection of accommodations. The absolutely destitute should be admitted free of charge. Others should pay what they can, or for what they want. The latter two classes have the privilege of employing their own physician. This gives the family physician, if there is one, still the first choice. This being so, the doctor not only continues to sustain the same relations to his clientele as before, but it makes his work easier, safer and more satisfactory. He need no longer trouble himself with the minor details; the help he may want is there and already well trained; whatever instruments, dressings or other articles he may need without delay, will be ready for use; all he is to do is to look to his own aseptic condition and then help himself or ask for what he may need. His results will, therefore, be better; the work itself much more agreeable and not half so burdensome as when the patient is delivered at her home. He will thus save the patient's health and wealth, himself a great deal of time and worry, increase his reputation and be better paid in the end, financially and otherwise.

In our larger cities hospital accommodations are already very extensive, but by no means sufficient. The smaller cities and towns are beginning to build hospitals, and there is no good reason why the smallest village should not erect a hospital for this purpose alone, if not for any other. Where hospitals do not or can not exist the practice of obstetrics must, of course, be carried on as in the past.

POSITION OF THE WOMAN DURING DELIVERY.*

WILLIAM D. PORTER, M.D.

CINCINNATI, OHIO.

The literature of this subject is practically confined to two questions: 1. What effect has posture on the mechanics of labor? 2. How does posture affect the pelvic diameters?

It is not the purpose of this paper to discuss either of these questions; but rather to consider posture with reference to its bearing on sepsis, and to determine, if possible, what position is most conducive to an aseptic technique. The plan of delivering the woman as she lies in bed—the amniotic fluid, the child, the blood, the placenta and often fecal matter being received by the bed or its protections—has had from antiquity to the present, the sanction of universal custom. With such conditions an aseptic technique is incompatible. In the homes of those who are able to command the comforts and some of the luxuries of life, these unfavorable conditions can be greatly modified.

Given a clean patient in clean garments, a firm mattress with clean protectives, sheets and pads, together with a competent nurse, and the danger is largely, though by no means entirely, eliminated. Under the most favorable circumstances there are dangers of infection which would not be tolerated in a surgical

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

operation. When the head is on the pelvic floor, in spite of all preliminary preparation, fecal matter may escape coincident with the pains; and, if the labor is about to terminate, the nurse has not the necessary time for again cleansing the patient. Infection may occur through soiling the hand, which in the necessary haste, the accoucher might easily overlook. Or an accumulation of fluids may float fecal matter into contact with lacerations or abrasions or even into the vagina. The serious infections of the colon bacilli probably occur in some such way. Unless the mattress be exceptionally firm, the woman's hips occupy a depression which will be filled with fluids. When we recall the relaxed condition of the vaginal outlet at the end of labor, the wonder is that infection does not oftener occur.

This danger of immediate infection is not lessened by the Kelly pad as ordinarily used. It protects the bedding admirably. But with the woman in the ordinary position on the ordinary mattress, fluids will not drain away from the parts, owing to the depression in which the hips lie. The pad prevents the rapid escape and absorption of fluids, and by holding a pool about the vulva, the chances of infection are increased. This objectionable feature is sometimes overcome by following the English custom of placing the woman on her side with her hips well to the edge of the bed. In this position the Kelly pad can be well utilized. But it is a position in which it is difficult to control the patient, particularly when she is partially anesthetized. It involves flexion of the thighs which distinctly increases the danger of perineal laceration. And, moreover, it is a position which has never met with favor in this country.

For years it has been the invariable custom of the writer to deliver in the following position: The woman lies on her back across the bed, her hips well to the edge and on a Kelly pad, so arranged as to carry fluids into a vessel on the floor. For this purpose, the small square pad is most suitable. The patient's legs are separated and extended. They are supported by assistants, by a couple of suitably placed chairs, or—and preferably—over the knees of the obstetrician, who sits on a chair facing the bed at a convenient distance. She should wear her stockings, her thighs should be enveloped in clean towels and she should be covered with a sheet. This position is maintained from the end of the first stage until the termination of labor, unless the second stage be tedious. In that event, the patient can resume her ordinary position in bed, to be again brought into the position described before the end of the second stage. The position is not tiresome to the patient or physician and can be maintained for hours without discomfort to either.

The first thing after placing the woman in this position, is to have the nurse thoroughly cleanse the external genitals and inner surfaces of the thighs with a generous application of soap and hot water, followed by an antiseptic solution. This should, for obvious reasons, be a routine procedure, irrespective of previous preparation. It corresponds to the final preparation of the site of a surgical operation. It is claimed for this position that, with intelligent management, the parts so cleansed will not be infected during the labor. In case fecal matter escapes during a pain, it gravitates at once to the vessel on the floor, and all traces which could offend the sense of sight or of smell, are swept into the vessel by the free application of an antiseptic solution. The maintenance of a fixed position is unquestionably favorable to asepsis. The patient is less likely to contaminate the parts than if she were permitted to frequently shift her position. The physician can much more certainly keep his hands clean than if he were compelled to move about to accommodate himself to the changing position of his patient. He is constantly prepared to render assistance, and thus avoids the too common blunder of managing the termination of labor with hands improperly cleansed, on account of haste at the last moment.

This position also reduces the number of vaginal examinations. The examinations usually made from time to time by the accoucher, that he may be apprised as to the probable termination, are not necessary. Within reasonable limits, the time makes no difference, as the position insures constant readiness on his part.

This position, better than any other, insures control over the advance of the head as it is about to emerge. In the ordinary position the degree of control is by no means satisfactory. Unless anesthesia be profound, the woman is likely to toss about at the critical moment. This often results in a needless degree of laceration. The position advocated eliminates this unfavorable element. The patient, unable to secure points of resistance for her feet, can not change her position. The obstetrician is in complete control and can delay, to the most favorable time, the delivery of the head and can manage accurately the rate of advance when it is delivered.

When delivery occurs, first the head and then the body is grasped, and the child is carried up over the pubes. The nurse places the blanket, in which the child is to be wrapped, across the abdomen and pubes of the mother. On this the child is placed transversely and low enough to permit of ready manipulation of the uterus. This avoids the danger to the child of infecting the eyes or cord with fecal matter and there is less liability that it may aspirate fluids into the air passages. Before the child is moved the cord is dressed and dressing secured by a binder. To allow quite an interval to elapse between the cutting and the dressing of the cord, with the possible danger of infection, is an unsurgical procedure. The facility afforded by this position for the delivery of the placenta and for the detection and repair of perineal laceration needs no comment.

Of no very slight importance is the ease with which the patient can be cleansed at the termination of labor. No other position permits such free use of water. If ordinary care has been used the woman is clean and her garments and bedding spotless.

We have been considering that small minority of patients who live in well-appointed homes and command the services of the trained nurse. The vast majority of child-bearing women are unable to secure these safeguards. The membership of the lower classes is prolific as well as numerous. Living, as they do, in cramped quarters, the bath-tub an unknown luxury, it would be unfair to expect a high standard of household or personal cleanliness. In isolated cases, the housewife rises superior to her surroundings and is a model of neatness and cleanliness. She is the bright exception to the general rule of dirt and disorder. If the woman of this class is able to have in readiness, at the time of her labor, a change of linen for her bed and a few clean towels, she feels entitled to credit. She probably depends for nursing on some member or friend

of the family; or much worse, on a so-called nurse, but one without training, and whose ignorance of asepsis is equalled only by her assurance, and her readiness to act on her own initiative and in defiance of instructions. In this class the young physician, struggling to make his way, finds most of his obstetric work. Should he choose the usual position for delivery, his examinations are fraught with danger. Bedding and patient are likely to be in a sorry plight at the end of labor, and the chances are that these conditions will continue during the lying-in period.

If he adopts the position herein recommended he needs only soap and sterilized water to insure safety to his patient. A liberal application of soap and the use of a large fountain syringe of hot water, followed by an antiseptic solution, comprises a ready means of cleansing the external parts. If necessary, this can be done by the physician, and there is need of little or no exposure. If he will exercise the forethought to sterilize forceps, ligatures, sutures, needles, scissors, etc., and place these within convenient reach, it will be unnecessary for him to leave his chair until the labor has terminated and every necessary detail has received attention. He is in complete control of the situation and protects his patient from infection in the most unfavorable surroundings.

Incidentally, in an emergency such as post-partum hemorrhage, this position is advantageous. There is necessarily a prompt notification of the danger, and the woman is already in the most favorable position for treatment. Moreover, the young physician will find the position the best for studying the mechanism of labor.

In conclusion a brief recapitulation embraces the following claims for this position:

1. There is less liability of infection with fecal bacteria.
2. Fewer examinations are necessary.
3. There is better control of the head at the time of delivery, and consequently less danger to the perineum.
4. The woman can be more thoroughly cleansed after labor, and clothing and bedding are not soiled.
5. There is less danger of infecting the eyes or cord of the child and less risk of its aspirating fluids into its air passages.
6. In managing cases in the unfavorable environments of the lower classes, the position is especially valuable to the young physician, whose experience is gained largely among these classes.

THE PROPHYLAXIS AND TREATMENT OF PUERPERAL SEPSIS.*

JOHN F. MORAN, M.D.

Professor of Obstetrics, Medical Department, Georgetown University; Obstetrician to Columbia and Georgetown University Hospitals.

WASHINGTON, D. C.

The recent developments in bacteriology and pathology have demonstrated conclusively the fallacy of the previously accepted theory of the essentiality of puerperal sepsis, and likewise have been able to explain its manifold manifestations by showing that wound infections and puerperal infections are identical and may be due to a variety of pathogenic organisms. Streptococcus, staphylococcus, bacillus coli communis, gonococcus and pneumococcus are the most frequent causes of puerperal infection, while the bacillus of diptheria, anaerobic and other micro-organisms have been demonstrated to be occasional factors in the pathogeny.

Streptococcus pyogenes is found in the body under a variety of circumstances, and is probably the most important cause of septicemia and pyemia following wounds of ulcerative endocarditis, of tonsillitis and erysipelas. Bacteriologic investigation shows it to be the most frequent cause of the various septic processes following labor, and it may be found pure or associated with other organisms. It has long been recognized that its manifestations are varied and that they depend upon several factors: the nature of the organism; the soil; the dose of virus, and the place of entrance. The most important factors are the virulence and character of the infecting organism. Variation is common to different specimens of the same species. Under certain conditions the virulence is increased, while under others it may be decreased or attenuated. It may produce abscesses at the point of inoculation, which may, or may not, become diffused throughout the body, or it may even cause death without the appearance of any local change.

The staphylococcus and colon infection are as a rule milder forms of sepsis, but Strunkman has collected twenty-five fatal cases of the former and three of the latter. The writer has seen one fatal case of staphylococcus aureus and two of the colon variety.

The parturient tract has been aptly compared to a surgical wound and it is easy to conceive, that, with the contusions and lacerations together with the lowered resistance of the system incident to labor, the conditions are very favorable for the development of germs when once they are introduced. According to Widal, Baum, and Gärtner, the placental site is the favorite point of invasion of the infecting germs, either by way of the lymphatics, or veins, or both. Yet infection frequently takes place from wounds of vagina and cervix.

The results of the bacteriologic examination, with regard to the presence or absence of pathogenic germs in the vaginal secretion under ordinary conditions, are by no means in harmony. Gonner and Döderlein in 1887 investigated the subject and, while the former obtained negative results, the latter obtained many varieties of pathogenic organisms, including streptococci. Since then, numerous capable observers have investigated the subject with variable results. Menge, Kronig, and Williams have gone over the work very carefully and find that the uterus and vagina, under ordinary conditions, are sterile as regards pathogenic organisms, and, that the discrepancies of other observers are due to faulty technique in obtaining cultures. Further, the investigations directed more particularly to the vulva, show that it is rarely, if ever, free from pathogenic organisms, and that it is almost impossible to render it so.

Döderlein attributes the absence of pathogenic organisms in the vaginial secretion to the bactericidal influence of the acid products of the vaginal bacillus. Kronig does not think this view justifiable and believes that several factors play a part, namely: chemical substances in the secretion, probably acids; antagonism of the bacteria living in the vagina to imported bacteria; leucocytosis and phagocytosis; lack of oxygen and tissue juices.

From the foregoing survey of the literature, it is seen that the uterus, under normal conditions, is sterile and some hold a similar view regarding the vagina; but

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

all authorities agree that the vulva is scarcely ever free from pathogenic organisms. We can readily understand then, how easy it is to infect the vagina and uterus even by simple internal examination, or the giving of a douche. Further, the experiments of Bumm, Döderlein, Kronig and others show that antiseptic douches tend to impair the normal bactericidal influence of the vaginal secretion, and, as the pathogenic organisms are not destroyed, or diminished in number, their use should be dispensed with. Pestalozzi reports 4000 cases confined in the Maternity in which no ante-partal or post-partal douches were employed. It was only necessary to isolate 33 and of these, 30 recovered. These results are in accord with those reported by Leopold, Merman, Goldburg, Zweifel and others who have treated cases with and without douches. Again, let us compare the results obtained in the lying-in hospitals of Europe before the pathologic anatomy period, in which only prophylaxis was used. Vienna from 1786 to 1822, had a total death-rate of 6 per cent. in 44,858 cases. The Dublin Rotunda Lying-In Hospital in 93 years, from 1757 to 1849, had 1.23 per cent.; and the British Lying-In Hospital during the same period shows a mortality of only 2 per cent. It can hardly be sustained that the antiseptic treatment has accomplished all that has been claimed for it.

So it is seen that recent bacteriologic and clinical investigations are in accord, and the antiseptic treatment, which has steadily gained ground from the time that Semmelweiss showed a causal relation of cadaveric poison to puerperal sepsis, is gradually giving away to the more rational idea of asepsis. Routine douches, before and after labor, are being discarded, and our attention is being directed to the thorough cleansing and the disinfection of the external genitalia, of the hands of the physician and nurses, of the instruments, dressings, etc., and to the avoidance or restriction of internal examinations.

The treatment should vary according to the character of the infection. It may be local, with a view of removing or destroying germs at the point of infection; or general, by use of measures to neutralize the introduced bacteria or their toxins, and to fortify the system in its struggle against the infectious germs; or surgical, to remove collections of pus, and organs that may have become a menace to the welfare of the patient. It is well to regard every case of fever occurring during the puerperium as septic, until proved not to be so by a searching investigation. Our first duty, after obtaining a history of the case, should be to make a careful and thorough bimanual and specular examination of the uterus and pelvic organs. If there be lesions of the external genitals or vagina, they should be appropriately treated and the uterus not invaded unless indications point to infection of that organ. The possibility of pus existing in the pelvis before labor, due to pyosalpinx, ovarian or appendiceal abscess, should be borne in mind. If these and other causes of pyrexia, such as malaria, typhoid fever, etc., can be excluded, the uterus should be gently explored with the finger, or dull curette, and any placental debris or clots removed. If possible, a bacteriologic culture should be taken directly from the uterus, and then an intra-uterine douche, preferably of sterile water, or sterile salt solution, should be given. Should the bacteriologic examination reveal saprophytic infection, the douche may be repeated, especially if the temperature remains elevated and a foul-smelling discharge continues.

If it proves to be a case of pathogenic infection, further local treatment is contraindicated, as it can not possibly reach the organisms which have penetrated beyond the reach of such measures. If the infection has spread into the broad ligaments, as may be manifested by the extension of the pain over the region and the revelation of a boggy sensation on vaginal examination, the lymphangitis and localized peritonitis must be combatted by the application of the cold pack, or preferably, the rubber coil applied to the lower abdominal region, and the giving of anodynes to relieve the pain.

I am confident that the repeated giving of intra-uterine douches and the use of the curette in streptococcus infection, is decidedly harmful. The danger of introducing other germs and causing a mixed infection, and, the production of more or less traumatism of the endometrium, thereby breaking down Nature's protective zone of leucocytes, and opening up new avenues for wide-spread systemic infection, are strong arguments against injudicious local treatment. Again, the use of large quantities of the bichlorid of mercury and other antiseptic solutions, as recommended by many authorities, would seem to be irrational because of the invasive qualities of the streptococcus; it can not exercise its germicidal effect, besides there is great danger of poisonous effect from absorption. Douches are only necessary to wash away any retained debris, therefore sterile water and normal salt solution are to be preferred, as they are harmless.

The general treatment will embrace the use of strychnia, nitroglycerin and stimulants to strengthen the heart. The amount of stimulation that septic cases will bear, is surprising. I have seen so much as a quart of brandy used daily for two weeks with good results. Antipyretics should not be given as they depress the heart; quinin is of little avail, except in malaria—besides, given in large doses it is apt to derange the stomach.

Nuclein and albumose have been used for the purpose of increasing leucocytosis, and in recent years normal salt solution subcutaneously, or by the bowels, is being received with much favor. It is a rational measure—for it flushes the kidneys, eliminates the toxin and stimulates the heart. Mace, Fouchier, and others, recommend baths at a temperature 77 F., repeated every three hours and claim to have obtained good results.

The results from the use of anti-streptococcus serum have on the whole, been disappointing. Statistics show the mortality to be about 35 per cent. Many of the failures may have been due to the inferior quality of the serum. It is important to determine whether the case be one of simple or mixed infection. Curative effects are claimed for only a simple streptococcus infection. The most plausible explanation of failure would seem to be that offered by Smith, who says: "When we come to deal with those bacteria which do not produce a soluble diffusible toxin, but which have poisons either stored up in their bodies or represented in their body substance, the production of a satisfactory therapeutic serum has not yet been placed beyond doubt. It would seem that immunity towards these latter poisons can not be pushed beyond the endurance of a relatively small dose, and certain investigators have, for this reason, looked upon bactericidal functions of immune serum as the only hopeful prospect. It is now generally known, from the work of Pfeiffer and others upon typhoid and cholera bacteria, that such serum, which does not manifest, outside of the body,

more than agglutinative power, does actually start bactericidal forces in the animal body, when introduced with the bacteria.

It is probable that the action of the streptococci is subject to the same laws. If this phenomenon should be found generally true of the invasive bacteria (that is, those which enter the body and multiply therein, and not simply act from some one point through absorbed toxins, as is the case with diphtheria), it follows that any serum-therapy, so-called, to be successful, must come into play either before, or immediately after the time of infection, in order that the multiplication of the bacteria may be checked before much poison has accumulated. It is probable that, between the strictly toxin-producing and the infectious bacteria, transitional species will be found for which an anti-toxin may be of some use because of the presence of traces of toxins set free by the bacteria. This hypothesis may account for the favorable results occasionally reported after the administration of streptococcus serum."

In our experience, the serum in cases of pure streptococcus infection seemed to have a beneficial influence, and, during its exhibition, local and general treatment was withheld. It is impossible to say how much value the serum per se was, in these cases; but the gradual lowering of the temperature in from 7 to 24 hours, with a corresponding reduction and steadying of the pulse, attended by a profuse perspiration and marked improvement in the subjective condition after each injection, would seem, in the absence of any other measure having been used, to have exercised a salutary influence.

The most perplexing problem we have to solve in the treatment of sepsis is, when is surgical intervention necessary? No one will question the necessity of removing the uterus and its adnexa, if they are infiltrated with foci of pus which can not be properly drained; or, of evacuating purulent collections, whether they be in the pelvis, peritoneal or pleural cavity; but when shall we operate? Those of us who have had in maternity services the opportunity of observing the varying phases of puerperal sepsis, know, that there is a tendency to recover along conservative lines, and that a very small percentage require operation. Furthermore, there is great danger of converting a localized infection into a general one by the use of intra-uterine douches and the curette. If we carefully analyze the mortality statistics of septic cases treated surgically, we can not but be impressed with this fact—that too little attention is devoted to a systematic clinical observation and the study of the various forms of sepsis. What is needed, is greater care in the study of the differential diagnosis. Bacteriology and pathology are gradually adding to our knowledge in this direction. We know that the streptococcus is the most virulent and frequent variety, and when it spreads beyond the genital tract, it does so by way of the lymphatics or veins, or both. We also know that the peritonitis which follows is primary, but that the tubes and ovaries are only affected secondarily, if at all. On the other hand, gonorrheal infection spreads by continuity of the mucous membrane and invades the tubes and ovaries primarily, while the peritoneum is involved secondarily. Staphylococcus, colon, and other pathogenic organisms, act in a similar manner to the streptococcus but in a milder degree. However, the clinical features differ. In an infection by the streptococcus the pulse rate is apt to be rapid and out of relative proportion to the rise of temperature, and the constitutional symptoms are usually well marked. On the contrary, in staphylococcus, colon, gonorrheal and saprophytic infection, the temperature may at times be high but the pulse rate is relatively lower.

In conclusion, then, the treatment of sepsis will depend upon the skill and judgment of the physician and the condition of the patient. It would not be justifiable to open the abdomen without some physical reason. The different forms of sepsis should be thoroughly understood, for an operation will hardly be required except in pathogenic infection. When the operation is performed early many organs will be needlessly sacrificed, and if performed late, the mortality will be increased. When there is continued fever with increasing physical signs, the operation is permissible; without the latter, general symptoms would indicate systemic infection and surgical measures can only hasten the end.

THE INDICATIONS AND CONTRA-INDICATIONS FOR THE USE OF THE CURETTE IN OBSTETRIC PRACTICE.*

HENRY D. FRY, M.D.

WASHINGTON, D. C.

The curette is a valuable instrument, in the hands of the obstetrician as well as the gynecologist. The indications and contra-indications for its employment are less understood in the practice of the former than of the latter, and much harm has resulted from its indiscriminate use.

In the earlier days of antiseptic midwifery puerperal fever was fought by active intra-uterine treatment, curettage and irrigation, without selection of cases. Even to-day, too little attention is paid to a consideration of the subject, and while the curette is valuable in one class of these cases, it is equally injurious in another.

The object of this paper is to bring out the experiences of the members of the Section; to break away from the old routine custom of using the instrument, and to point out clearly in what class of cases to use, and in what class to discard, the instrument.

We must bear in mind that it is employed in place of, and as a poor substitute for, the finger to remove foreign substances from the uterine cavity, as pieces of placental tissue, retained portions of membranes, blood clots, etc. In abortion, when the cervix can not be dilated sufficiently to pass the finger the curette must be used as a substitute; and again, when the expulsion of the product of conception is in the later months, the finger is unable to reach the fundus uteri. The indications for its employment to remove retained products of conception and blood clots are clear. The complications following abortion and miscarriage are almost invariably due to the retention of some part of the ovum. This is manifested by hemorrhage or fever, one or both. The hemorrhage may be coincident with the casting off of the ovum or some part of it, or it may continue afterward uninterruptedly or in recurrent attacks. Decomposition of the retained tissue accompanied by a foul odor to the discharge and febrile reaction is another complication. There is no question of doubt regarding the indications for the use of the curette in these cases. The removal of the offending material promptly stops the hemorrhage or fever.

Unfortunately, the treatment of incomplete abortion

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

and miscarriage is too often expectant. Indifference on the part of the practitioner or a desire to consider the case unimportant leads to a neglect of radical treatment. Again, in many cases, a let-alone policy is followed because the general practitioner, to whom a large share of this work falls, modestly considers himself unequal to the emergency. These cases come under his care so often in the course of his daily practice, it is his duty to familiarize himself with the method of treatment necessary.

In incomplete abortion and miscarriage when the cervical canal is sufficiently dilated, the finger is used to clean out the uterus. In most cases the patient should be thoroughly etherized, the uterus depressed with one hand on the fundus, the other hand inserted into the vagina and one or two fingers passed into the cavity of the uterus. Retained and attached portions of placental tissue are removed, a hot intra-uterine injection given of sterilized salt or antiseptic solution. If the uterus is thus cleaned out all hemorrhage is checked and the case pursues an uninterrupted convalescence.

If the case be not one suitable for this simple method of treatment, curettage may be preceded by a short preliminary treatment with the tampon, in hopes the uterus may expel its contents. Failing to do so in twenty-four or thirty-six hours, the curette should be used, preceded generally by a rapid dilatation of the cervix. Except under anesthesia, the operation can not be done satisfactorily. Asepsis is a necessary part of the technique. During curettage the removal of blood clots which plug the uterine sinuses is frequently accompanied by severe bleeding.

The hot intra-uterine douche or gauze tamponade of the uterus will be necessary. The gauze should be removed in twenty-four hours and the uterus washed out with a hot sterile douche. Rest in bed and hot vaginal douches will complete the course of treatment.

We have dealt with the treatment of incomplete abortion and miscarriage with hemorrhage and fever. The fever is due to the absorption of ptomains produced by the action of the bacillus of putrefaction upon the foreign matter contained in the cavum uteri. The removal of the offending mass with the curette gives results that are all one can wish. The good effect that follows the treatment in these cases has led to its abuse in fever after childbirth.

In cases of criminal interference with pregnancy we often have to deal with a different and more serious infective agent than the saprophytic germ. Fever is now, unfortunately, too often due to streptococcic infection. Under these circumstances, the indications for curettage are similar to those met with after childbirth and we will consider the two together. Whereas great benefit is derived, as we have already seen, by the use of the curette in removing material acted upon by the bacillus of decomposition, on the contrary, harm will follow its use when the infection is streptococcic. By use of the curette it is impossible to get rid of streptococci. Nature makes a noble and often successful resistance by throwing out a protective zone of inflammatory tissue at the point of infection. Leucocytes swarm to her assistance and take up their burden of the fight to resist the aggressive germs.

Now, what does the curette do in these cases? It simply breaks down the earthworks, scatters the defenders and opens a door of entrance to the invaders. The infection, instead of being localized is made general. The clinical history bears out the statement. Cases of streptococcic infection invariably get worse after curettage. A chill shows systemic infection; the symptoms are all aggravated, and more cases end fatally than whan the curette is not employed.

Hence, it is of prime importance in a given case to ascertain the nature of the infective agent, or agents, before resorting to the curette. The foul discharge that accompanies the action of the bacillus of putrefaction is a safe guide to indicate the use of the instrument. In the absence of that sign the indication is not clear, and we must rely upon the culture test.

The culture is taken by introducing a sterile glass tube into the uterus and with a syringe attached to the other end, the uterine discharge is sucked into the tube. It is then placed in a culture tube containing agar-agar. The growth of the organism will demonstrate its character in twenty-four hours. To be of value, the culture must be taken with the strictest detail to aseptic work. After having taken the culture, the uterus is thoroughly douched out with sterile salt solution and no further local treatment instituted for twenty-four hours, or until the result of the culture is known. If it prove to be streptococcic the curette is contra-indicated.

In another class of cases the curette does harm. Infection may exist in some laceration of the vulva, vagina, or more often, the cervix. The cavity of the uterus is not involved. The use of the instrument under these circumstances is uncalled for and will likely spread the infection into the uterus.

At the risk of being found guilty of repetition, we will consider the indications and contra-indications for the use of the curette by taking a hypothetical case. A woman having given birth to an infant, in three or four days afterward suffers from a fever, which is preceded or not by a chill. All the usual symptoms of puerperal fever are present. Shall we or shall we not curette? Believing that the curette does harm in some of these cases we must look for clear indications for its use. First carefully inspect the external genitals, the vagina and cervix. In not a small proportion of cases the door of entrance for the germs is located in one or other of these parts, and in such it is evident the curette would do harm by carrying the infection into the uterine cavity. If, on the contrary, the examination be negative, and the indications point to intra-uterine infection, the next point to decide is the character of the infection. The presence of a foul odor to the discharge would justify the careful use of the curette. A culture should then be made of the discharge and the cavity thoroughly injected with hot sterile water or salt solution. In the absence of foul discharge the curettage should be omitted, but the culture taken and the preliminary injection employed. After twenty-four hours the culture growth will demonstrate the nature of the infection. If other than saprophytic the curette must not be used.

Streptococci are the most common and serious germs encountered in puerperal infection, but the same rule regarding the use of the curette applies to others, such as the staphylococcus, gonococcus, colon bacillus, etc.

In obtaining the culture the external parts should be cleaned and washed in bichlorid, the hands and instruments must be clean, the cervix exposed and held with a double tenaculum or bullet-forceps. The sterile glass tube is passed into the cavity of the uterus, a syringe attached to the other end with a short rubber tubing and some of the fluid drawn into it. The cotton plug is removed from a culture tube containing the agar-

agar and the discharge inserted. During the twelve or twenty-four hours required for the growth of the organism the case is treated on general principles.

The clinical history of the case presented, as well as the history of confinement, aid materially in making the diagnosis before the bacteriologic test is available.

A final word of caution to the inexperienced may not be out of place, regarding the danger of using the curette in a septic uterus. The walls are easily punctured or torn, and any approach to force is unwarranted.

A CASE OF STREPTOCOCCUS INFECTION FOLLOWING LABOR—OPERATION AND RECOVERY.*

WILLIAM H. HUMISTON, M.D.

Associate Professor Gynecology in the Medical Department of Western Reserve University; Gynecologist-in-Chief to St. Vincent's Charity Hospital; Consulting Gynecologist to the City Hospital, Etc.

CLEVELAND, OHIO.

A primipara, aged 23 years, was delivered with forceps after six hours in labor, on Nov. 26, 1900. On the third day, after a slight chill, the temperature rose to 103 F. The uterine cavity was douched with a mild antiseptic solution. Failing to get a result from this procedure, the curette was employed, and thereafter daily intra-uterine douchings.

On December 5, the sixth day of the fever, I saw the case in consultation. Temperature was 100, and the pulse 120, irregular and weak. The fundus of the uterus was midway between the symphysis pubis and the umbilicus. There was no tympanites and but little tenderness of the abdomen. A deep laceration of the perineum, which had been repaired after delivery, but opened again, and the torn surfaces of the cervix (right lateral tear) were covered with a grayish slough, which in appearance was not unlike that of diphtheric origin. There was marked cellulitis to the right of the uterus extending to the pelvic wall.

I advised an incision and drainage of this mass through the vagina. The family desired to temporize, as the patient then seemed to them to be a little better. However, on the evening of that day they reported that a sudden change for the worse had occurred following a severe chill. The temperature as recorded was 103, and the pulse-rate 160. The patient was vomiting and complained of severe pain.

She was admitted to the hospital early on the following morning. Her temperature was 104 and pulse 160, arrhythmic, irregular and of small volume. Her general appearance was that of grave toxemia. There was great abdominal distention and increased tenderness. She was having a septic diarrhea. A small quantity of urine was obtained by catheterization and found to contain granular casts and renal epithelium.

After thorough cleansing of the vagina and the uterine cavity, the latter was packed with iodoform gauze. A very free incision was then made through the posterior vaginal vault, and the dissection carried upward and between the folds of the right broad ligament. There were several small foci of beginning softening in this area of cellulitis, but no pus formation as yet. When the pouch of Douglas was opened a large quantity of bloody serum, streaked with whitish flocculi, escaped. Examination of the Fallopian tubes showed that they were not involved in the process. After carefully drying the parts, two small pieces of rubber tubing were used for draining the cul-de-sac and the broad ligament. Iodoform gauze, rinsed in hot salt solution, was used to pack the cavities. During the operation two quarts of normal salt solution were injected under a breast.

Cultures were taken from the cervical canal and the peritoneal cavity. From the latter, growths of the streptococcus pyogenes and colon bacillus were obtained; and from the cervix, the same together with the staphylococcus pyogenes albus. Cover-slip preparations gave the same results. No diphtheria bacilli were obtained. Three drams of chloroform were used, and the patient was on the table thirty minutes. In twelve hours the temperature was 102.4, and the pulse 116.

On the third day the temperature again rose to 103.2 and the pulse 130. On removing the vaginal dressings an abscess containing one and one-half drams of pus was discovered in the vaginal wall. After this was opened the patient progressed rapidly. On the fifth day the temperature was normal and the pulse remained below 100.

With the Fallopian tubes apparently normal, the infection of the peritoneum must have occurred by an extension from the cellulitis. Even though, as in this instance, the physician may be in attendance upon cases of diphtheria and the slough may bear the characteristic appearance of diphtheric exudate, bacteriologic investigation is necessary to determine its causation. The absence of shock and the rapid reaction is not due alone to the use of a large quantity of salt solution, but to the rapidity and the ease with which these conditions can be cared for by the vaginal method. There is no necessity for complete narcosis, and the limited amount of the anesthetic required minimizes the dangers of unfortunate results.

An examination of the pelvis six months after the operation reveals a very satisfactory state. The obliteration of the cul-de-sac has made the uterus somewhat immobile, but this can be largely overcome by massage and judicious use of tampons. The right broad ligament, together with the uterine adnexa of this side, are practically in a normal condition.

I have reported this particular case, 1, because of its gravity; 2, because of the happy results; 3, because of its gravity and the results obtained, the report may stimulate others to use the vaginal route in preference to the abdominal. I have not yet lost a case of puerperal sepsis where the septic foci were confined to the pelvis since my adoption of the vaginal method.

122 Euclid Avenue

DISCUSSION ON PAPERS OF DRS. ZINKE, PORTER, MORAN, FRY AND HUMISTON.

DR. PHILANDER A. HARRIS, Paterson, N. J.—There is no reason why anyone should differ essentially from the points brought out in these papers. When I and others of my age studied medicine, hospitals were regarded as death-traps, and for long afterward we looked askance at maternity hospitals; conditions have changed since then, and now a well-ordered hospital is the very safest place for a woman during her confinement, especially when any instrumental or manual aid is necessary. The question as to what extent women may be taken from their homes to the hospital is a matter for consideration. It has its ethical side.

Dr. Fry's statement that the uterus may get into a condition where it no longer takes up an infection, is very true. I believe the endometrium usually acquires this immune condition in a few days, and that the toxemias and other evidences

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

of a continued infection are due to extensions from the primary infection to other parts. If, therefore, we employ a curette to field what Nature has already defertilized, or strong disinfectants, or anything which will destroy the vitality of the tissue, then we may have a local reinfection. The matter of curetting the uterus under these conditions is a very serious and important one, and I wish to endorse the work of Dr. Fry. I have worked mainly along the lines laid down by him, which we all ought to follow. In certain instances physicians who have asked me to see cases of puerperal fever with them, have looked rather disappointed when I have refused to curette the uterus. In regard to the vaginal section, I stand entirely with the last speaker, and also with many others here who follow the example of Pryor, of New York. I do not believe it does any harm. Vaginal section may reveal pus when the qualities of fluctuation or induration are absent.

DR. MILES F. PORTER, Fort Wayne, Ind.—Puerperal infection is a term that covers a multitude of pathologic conditions, and we can not speak about its successful treatment until we first determine the form of infection we are endeavoring to treat. It occurs to me that the loose way in which we have been talking about vaginal versus abdominal section in puerperal infection, has led to a great deal of practice which is not of the best character. My own impression is in accord with the writer of the paper on the use and abuse of the curette in cases of puerperal infection of the endometrium. Vaginal section has a place if there is in the pelvis a localized accumulation of infectious material—a localized peritonitis. On the other hand, in the treatment of a case of progressive septicemia, whether puerperal or not, operations are seldom beneficial and usually harmful. There are so many things to say, that we might prolong the discussion indefinitely, but the point I want to make is that puerperal infection covers such a multitude of conditions that to speak of its treatment by any one method is irrational.

DR. A. B. CATES, Minneapolis—I think that the profession does not appreciate the progress made by our surgeons in the use of the rubber gloves. For the last two years I have been using them in nearly all my cases of confinement, and have found that the lying-in period has been greatly improved. It is rare, indeed, for sepsis to occur. The vulva should also be carefully cleansed, and the patient must be instructed to keep her hands away from the external genital organs. This is especially important, as sepsis is frequently conveyed in that way. In a case of sepsis, treatment should be directed to the place from which absorption is taking place. Sepsis will frequently occur from absorption from the perineum or from a lacerated cervix. These are the most common foci of infection. If the infection extends, as it frequently does, we most commonly have an endometritis. If this occurs it is desirable to ascertain the character of the bacteria present. We have been told that the streptococcus should be let alone, that we are not to curette in a case of streptococcus infection. That is good advice. I think that the suggestion of Dr. Williams, of Johns Hopkins, is a good one, that if on examination of the interior of the uterus we find a smooth surface, it is a streptococcic infection; if it is a rough surface it is usually a mixed infection or a sapremia. If you have a sapremia there is no question but what you need the curette and intra-uterine douches. I believe that with proper precautions, we can not, as a rule, do very serious harm with intra-uterine douches in any case except a streptococcus infection.

The use of ergot has not been mentioned by any one in this connection. I think more stress ought to be laid upon the use of ergot in the earlier stages of the lying-in period. It not only tends to contract the uterus, but also to prevent absorption from the lymphatics.

DR. W. O. HENRY, Omaha, Neb.—I think we talk too much of ideal conditions. The large majority of women confined are absolutely outside of the reach of a prompt bacteriological examination. Theoretically, Dr. Fry's paper is all right, but practically it can not be followed at the present time by the large majority of practitioners. I fully endorse his investigation; but as in the majority of instances it is impossible to determine quickly the nature of the bacteria present, we ought to agree on a line of treatment that every man can use safely, readily and successfully. I am confident that the man who knows how to use the curette following abortions or normal labor with infection, can use it safely. He will never do any harm. It matters not what your infection is, nor whether it comes from the endometrium or a torn perineum or a lacerated cervix or a tear in the vagina; every raw surface should be absolutely and thoroughly cleansed with the curette. If you were to look inside the uterus following a labor, you would find there a large mass of lymphoid-like tissue which is gradually breaking down and which in part keeps up the flow following confinement. If infection has started there, the sooner you clean out that uterus and get rid of all this tissue the better it is for your patient. It has been my practice for several years to clean out the uterus thoroughly, clean off every raw surface in the vagina, cervix or vulva with a sharp curette; then I put on absolutely pure carbolic acid, after which a little alcohol can be used to counteract the acid. I do not use it as a routine practice, but it will do no harm. The acid is a mild caustic and kills every germ within reach. If you find a little fluctuation or infiltration back of the uterus, make a vaginal incision and drain. Sometimes you get pus and sometimes a bloody fluid. The vaginal section is preferable to opening the abdomen, which I believe is always wrong in acute cases and will cause you to lose a large portion of your patients.

DR. EDWIN RICKETTS, Cincinnati—Much has been said as to the recognition of these germs after they have once caused the infection. I wish to say a few words on the line of prevention. I think since the appearance of the lady physicians among us, we have a great prophylactic factor which will do away with the midwife. When we, as a profession, recognize this fact and extend our aid to the recognized lady physicians, rather than extending it to the midwife, we are going to do a great amount of good in the prevention of many cases of sepsis. I recall an instance which occurred a short time ago in which a midwife was responsible for seven cases of infection, four of whom died. When we see how these cases are handled it is enough to cause consternation. You can read between the lines of every paper read on this subject this afternoon and it is against this thing of not being clean, and that in turn is against the midwife. I am in full accord with the statement made by Dr. Zinke that the birth of a child is a surgical procedure. Treat that uterus as you would a broken bone. The time is coming when the recently delivered uterus will be carefully packed with gauze and it will be one of the greatest steps toward dealing with such infection that we will have at our command.

DR. C. A. DANNAKER, Kansas City, Mo.—Modern civilization has produced an environment which does not help the work of the obstetrician. A great majority of people live in flats which are not conducive to carrying out proper aseptic precautions. A large number of people are not prepared by their environment to become mothers. The maternity hospital fills a long-felt want. The parturient can be taken care of there with less expense, better surroundings and better results than would obtain in the above surroundings. The maternity hospital is the safest place for this work.

In regard to the pathological germs, which the gentleman said mean so much, it is plain dirt. How many of us go to the bedside of a maternity case after washing our hands? Ask the nurse or attendant to bring a basin of water so that whenever we make an examination we can wash our hands. How many of you give an enema before labor begins so that the rectum is clean and so that you will not introduce anything into the vagina with your finger? How many of us are extravagant in the use of cotton beneath the vulva to catch the debris? So many of us think so little of these little things that make our patient comfortable.

As to the position of the mother, it is impossible in private families to bring the patient around to the side of the bed, except in instrumental interference. That can only be done in hospitals. We should think of all these things in time, as much depends on doing these little things right.

DR. J. WESLEY BOVEE, Washington, D. C.—I notice that there was some applause following Dr. Henry's statement as to the use of carbolic acid. There is no question that there is this very zone present mentioned by the essayist which is outside of material that is dangerous. This material Dr. Henry would remove with the curette and so would the rest of us if we could get it out alone, but the danger is that we might get into the zone beyond and thus open up the avenues for infection. It is impossible to remove all of the pathological organisms with either the curette or carbolic acid. As soon as you put the acid in it is diluted and thus gives an opportunity for the development of those bacteria that are left. The bacteria have a good pabulum to work on and avenues for spreading in the surrounding tissues. You must also remember a number of cases on record of carbolic acid poisoning resulting from its application to the uterus, and many other cases of dangerous toxic symptoms which, however, recover.

I am not willing to introduce my hand into the vagina of a woman who has been delivered two or three days previously. I do not consider the danger of my hand, but the danger of not getting a thoroughly sterile vulva from which infection can easily be carried into the uterus. This applies to the gloved hand as well as to the bare one.

I do not know how the last speaker expects to get rid of the danger of infection by washing out the rectum. It is perfectly proper to have an empty rectum during delivery, but he must not imagine that he has escaped the danger of infection by cleaning it out. One point of great value is to keep applied to the vulva an antiseptic solution. In my practice a pledget of sterile cotton is soaked in lysol or bichlorid solution and placed against the vulva, the vulva being spread open when the cotton is put there. That is kept there all during labor until the head of the child throws it off. It is also kept on for a number of days after the delivery. This is of extreme importance because it tends to asepticize the vulva.

DR. W. D. PORTER, Cincinnati—The use of intra-uterine douches is a procedure universally recommended by all authorities. They specify, as do the papers we have just heard, that such a douche shall be hot. Some seven or eight years ago a writer in the *Philadelphia Medical Journal* said that the chill which occasionally follows the use of the hot douche was due to the fact that the heat had the effect of contracting the vessels and of diminishing the drainage for a short time. The chill is the direct result of this failure of elimination. Since reading that article I have never used a hot intra-uterine douche and no chills have followed. I think it is important that the temperature of the douche be no higher than the body temperature.

DR. MORAN, in closing—My paper should have been entitled the "Prophylaxis and the Treatment of Puerperal Sepsis." It has been the custom in the Columbia Hospital at Washington to invariably use rubber gloves. Whoever examines the patient, is required to use the gloves. We have been doing that for the last year.

The Egyptian Medical Congress will be held under the patronage of the Khedive at Cairo, from December 10 to 14, 1902, under the presidency of Dr. Abbate Pacha. The honorary presidents are Dr. Ibrahim Pacha Hassan, Dr. Pinching and Dr. Ruffer. The general secretary is Dr. Voronoff. The work of the Congress will be divided among three sections, as follows: 1, Medical sciences, presided over by Dr. Comanos Pacha; 2, Surgical Sciences, presided over by Dr. H. Milton; and 3, Ophthalmology, presided over by Dr. Mohammed Bey Eloui. The program of the Congress will include discussions on affections especially rife in Egypt, such as bilharzia, ankylostomiasis, bilious fever, abscess of the liver, etc. Special attention will be given to questions relative to the epidemics which for some years past have regularly visited Egypt, and the prophylactic measures to be taken against them.—*Brit. Med. Jour.*

REMARKS ON SPINAL SURGERY, WITH ILLUSTRATIVE CASES.*

ANDREW J. McCOSH, M.D.
NEW YORK CITY.

(Concluded from p. 573.)

TUMORS.

Operations for spinal have generally been more satisfactory than those for cerebral tumors and offer better promise for future operative successes. There are good reasons for this. In cranial surgery the diagnosis, both as to the nature and location of the lesion, is less accurate; the lesion is often inaccessible to the surgeon and much permanent damage has often been done to the brain prior to the operation.

The symptoms of tumors of the cord are generally well marked and their location, at least within a certain limit, can be usually accurately determined. When studied with the history of the case the lancinating pains, the muscular paralyses and contractures, the altered reflexes, and the disturbances of sensation, lead us to a comparatively certain diagnosis and one is much less apt to meet with surprises than has been the case doubtless with most of us when operating for cerebral tumors. As already stated the location can generally be definitely determined. Uncertainty, however, always exists as regards the character of the growth and the structures involved.

Concerning the character of the lesion it is probable that tubercular masses, whether of bone or granulation tissue, are among the most frequent causes of pressure of the cord. In the present paper, however, this class of cases is not considered.

Of spinal tumors proper the most common are unfortunately those of malignant growth. The prognosis of these must of course always be bad, though not hopeless, as is shown by the permanent recovery of a patient from whose cord a sarcoma was removed by Davies Colley (Clin. Soc., London, 1892). Even if permanent cure can not be effected temporary relief for at least many mouths may be accomplished. As an example of this let me narrate the following cases, one of whom at the end of a year after operation is apparently perfectly well.

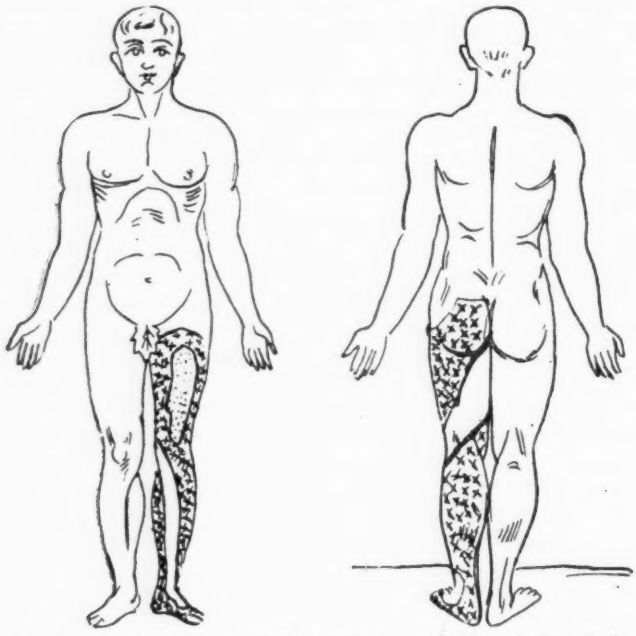
CASE 11.—Sarcoma of upper Lumbar Cord; Removal; Recovery: E. K., male, aged 39, has good family history. For many years alcoholic. No venereal or traumatic history. In December, 1898, he noticed a lancinating pain shooting down the posterior part of his right thigh to the back of the knee. It was spasmodic in character. He was treated for sciatica. It continued intermittently; in July, 1899, he experienced pain in the sacral region, right buttock and posterior thigh. He went to the country, where he spent the summer and improved so much that he was able to remain at his work from October till January, 1900, when the pain became so severe that he was obliged to remain most of the day on the sofa. About this time he came to see me, complaining of what he termed sciatica, mainly on the left side. He also complained of pain in the lower lumbar region where there was also some tenderness to pressure, especially to the left. There appeared to be some stiffness in the lower part of the spine; there was no paralysis, no anesthesia; knee-jerks were normal. I suspected at the time pressure on the cord but was rather inclined to favor tubercular disease of the bone. He drifted away from my care. He was treated with a brace, mercurial inunctions, iodids, etc., without benefit. In fact his symptoms gradually progressed and after the end of April his pain became especially severe,

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

extending down the posterior surface of the thighs and legs to the feet. About May 1 he noticed numbness, which extended over the area where later anesthesia (shown in the diagram) appeared on the posterior and outer surface of the left thigh, leg and foot. At the same time he noticed decided weakness of the left leg.

After consultation with Dr. Pease Bailey the diagnosis of tumor of the cord at the upper part of the cauda equina was made, and he was sent to the hospital on May 15 for operation. There was pain and tenderness along the lower spine; pressure at this point caused a burning sensation along the posterior and outer aspect of the left thigh and leg. There was partial paralysis of the muscles of the left thigh and leg with some atrophy, the left thigh measuring two inches less than the right. The left patella reflex was entirely absent. There was no ankle clonus; no priapism.

Operation May 22, 1900; gas and ether. An incision was made from the eleventh dorsal to the second lumbar spines; the spines and laminæ of the twelfth dorsal, first and second lumbar vertebræ were removed. Through the dura was seen a bluish substance. It was opened through the extent of the incision. No cord could be seen, but the canal seemed occupied

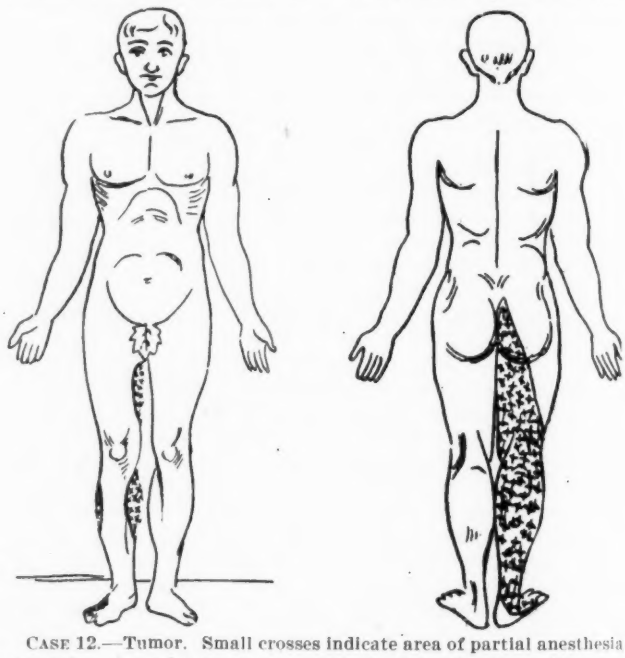


CASE 11.—Tumor. The small crossed lines represent partial, the dotted complete anesthesia.

by a bluish, watery, granulation-like mass which extended from the lower border of the twelfth dorsal vertebra to and somewhat below the upper border of the third lumbar vertebra. On pricking the tumor considerable greenish fluid escaped. At the upper part of the twelfth dorsal vertebra the normal cord was seen, and when followed downward was found displaced to the right and anterior part of the vertebral canal, where it was first exposed after removal of the tumor, which was done by a sharp spoon. The tumor, which was soft and vascular, extended well around the lateral surfaces of the cord. It was about two and a half inches in length, a half to two-thirds of an inch in thickness. All that was seen well around to the sides of the cord was carefully scraped away, as was also the bone. The hemorrhage was trifling. The dura was sutured, and also the wound. A small gauze drain being inserted. Shock was very slight and the patient made a perfect recovery from the operation. Previous to the operation for several weeks he had been using three to five grains of morphin daily, after the operation he required but one hypodermic of a quarter grain. His pain immediately ceased and on the day following he declared that he was more comfortable than he had been for months. He remained in the hospital for thirty days, during which time he gained 22 pounds. During this time he suffered no pain whatever, sensation gradually increased in the anesthetic area and when he left the hospital there was a slight knee-jerk in the right knee.

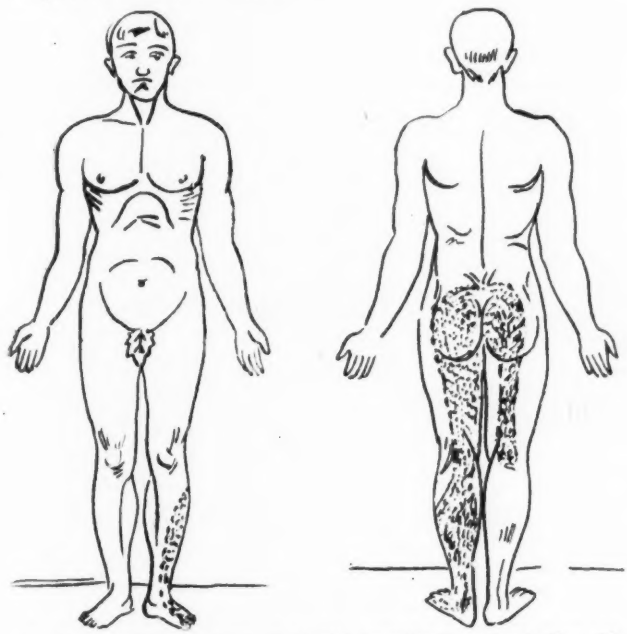
He continued to improve and on examination in September, 1900, sensation was found normal; the left patella reflex was completely restored; the left thigh measured but an inch and a half less than the right. He had gained 35 pounds in weight since the operation and said he was in perfect health. During the winter until May 25 he has remained at work lifting heavy printing plates weighing from 20 to 60 pounds from a table to a shelf above his head. He says that he experiences no stiffness or weakness in his back, and though he feels tired at night he feels well. While there is still a prospect of recurrence of the growth the man has been restored to perfect health and comfort for more than a year.

CASE 12.—Sarcoma of Lumbar Cord; Removal; Recovery; P. D., male, aged 46, had always been a healthy man of good habits, with no venereal or traumatic history. About Christmas, 1900, he began to feel some pain on the outer side of his ankles. About the middle of February he compained of considerable pain shooting down the posterior part of the right thigh and leg as far as the outer ankle. It increased rapidly, and by March 1 was so severe that he was obliged to give up work and go to bed. In the middle of March the pain began to shoot from the sacral region around towards the right groin, the glans penis, testicles and inner side of right thigh. He also had pain on defecation, and when his bladder was full. Micturition at times was difficult, and he was markedly constipated. He was brought to the hospital by ambulance on May 20, having fallen down in a severe paroxysm of pain. During a week's observation in the hospital, the pain, shooting from the sacral region across the right buttock and down the posterior surface of the right thigh and leg, was very severe. There was considerable loss of power in the right thigh and leg. He could not stand up, but thought this was partially due to his pain. There was an area of partial anesthesia, at times seemingly complete to both touch, temperature and pain along the right posterior thigh, leg, and over the outer side of the foot. On his buttock above and internal to this there was a narrow line of hyperesthesia. Both patella reflexes, but especially the right, were feeble. Jarring of the body did not cause pain, though it was somewhat increased on motion and there was some tenderness to pressure in the lower lumber region. In four weeks he had lost 80 pounds in weight.



CASE 12.—Tumor. Small crosses indicate area of partial anesthesia to touch, pain and temperature. Pain is also referred to this area.

After consultation with Dr. Northrup, the diagnosis was made of tumor probably malignant in the neighborhood of the third lumbar vertebra. Operation, May 28, 1901; gas and ether. An incision was made from the fifth to the first lumbar spines. The spines and laminæ of the second, third and fourth lumbar vertebræ were removed. There was seen lying on the dura a dark-red, purplish, vascular granulation-like mass, completely hiding the dura except at the upper and lower extremities of the wound. The tumor somewhat irregular, about two and a half inches in length, was spread out more than half way around the cord. It varied in thickness between a quarter and a half an inch. It was removed by a sharp spoon, and in order to reach its lateral projections the cord (cauda equina) was raised from its bed and almost lifted out of the canal. The tumor was apparently removed, but doubtless it was not thoroughly eradicated. It extended from the upper border of the fifth lumbar vertebra as high as the middle of the second lumbar vertebra. In its removal the dura was freely opened and in part removed. The nerves forming the cauda equina were considerably contused and somewhat lacerated. The dura could not be closed. The wound was sutured, with the exception of the gauze drain.



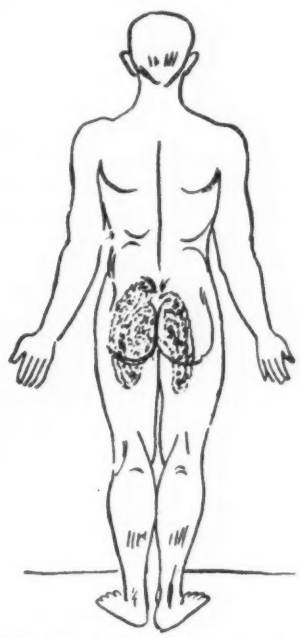
CASE 13.—Tumor. Area of partial anesthesia to heat, Nov. 10, four days before operation.

Very slight shock followed the operation. The man suffered no pain, in fact when he recovered from the anesthetic he declared he was more comfortable than he had been for three months. There were no muscular twitchings and no increase in his paralyses.

The gauze drain was removed at the end of thirty-six hours. A considerable amount of cerebrospinal fluid continued to escape from the wound for four weeks, and then gradually ceased. The anesthetic area remained unchanged for five days, when slight improvement was noticed, which has continued.

CASE 13.—Sarcoma involving Cord, Bone, and Muscles in Lumbar Region; Operation; Temporary Improvement, followed by Death: H. M., female, married, aged 39, is mother of four children. No venereal or traumatic history. Moderate drinker but always enjoyed good health. About the middle of September patient began to experience in the left foot and leg the sensation of pins and needles being stuck into the skin. This was most felt on the outer surface of the leg just above the ankle. It caused the patient considerable pain; during the next two weeks these sensations gradually extended upwards toward the trunk. The parts affected felt numb, less discomfort was felt when walking, than when at rest. About the middle of October the pain became less severe but the patient found she had lost the power to use her left lower extremity in walking or standing. At this time she still had control of her bladder and rectum.

On October 22 she was admitted to the medical side of the hospital; her general condition was then good; there was partial paralysis of the left leg, causing marked drop-foot. The patella reflex on the left side was completely lost, on the right markedly diminished. Sensation was normal to pain and touch. Several large blebs were present on the left foot. The circumference of the left leg was four inches smaller than that of the right. There was a beginning bed-sore over the sacrum. The symptoms rapidly increased, she soon lost control of bladder and rectum. In two weeks the paralysis had spread to the anterior tibial muscles of the right leg, and a saddle-shaped area of anesthesia developed in the lower extremities as far as the foot on the left side and the lower third of the thigh on the right. The paralysis of the right side continued to increase and the patient began to complain of very severe pain in the small of the back, and along the hips down into the thighs. The temperature was normal and the pulse ranged between 90 and 110. The urine contained albumin, casts, and some pus. In the meantime, on the supposition that the lesion might be syphilitic, iodid of potash was administered in increasing doses.



CASE 13.—Tumor. Area of partial anesthesia to heat, Nov. 26, sixteen days after operation.

The diagnosis was made of tumor, probably malignant, in the neighborhood of the second and third lumbar vertebræ. The patient was transferred to the surgical side for operation on November 13, 1900; chloroform. An incision was made from the first to the fourth lumbar spines. The muscles next the bone were found infiltrated with a spongy, very vascular growth, which infiltration was afterwards found to spread laterally for a considerable distance. The spines and laminæ of the second and third vertebræ, and probably a fourth, were more or less disintegrated and were infiltrated with the same spongy, friable, very vascular growth. Considerable masses of bone were removed, as also of the soft parts, in hopes that the pain would thus be somewhat relieved. Radical operation was out of the question and the cord which could not be distinctly recognized was infiltrated by the same new growth, as was also probably the vertebral bodies. The bleeding was severe, but was controlled by pressure. Shock was severe, but she soon rallied.

Marked improvement followed the operation. Her pain practically ceased; there was some return of sensation and to our surprise the wound healed kindly. On January 1 the patient was comparatively comfortable and was able to sit up part of the day in a chair.

The bed-sores did not heal. During February, however,

all progress ceased; the patient began to grow weaker; she began to suffer pain; the paralysis increased and in March a tumor developed in the epigastric region. She gradually grew weaker and died on April 10, 1901.

In regard to the structures involved, whether the tumor arises from bone, membrane or cord, it is often impossible to determine. The bony tumor will generally be malignant or tubercular in character. In either case while an operation may not be able to remove the growth it may enable the operator to relieve, at least for a time, the pains, which are apt to be agonizing. This may be accomplished by division of appropriate nerve roots. To be of any service three roots must be divided, as the anastomosis between the sensory nerves is so perfect that the division of one or two nerve roots is practically useless for abrogation of pain.

As regards the situation of the tumor relative to the cord, it may be stated that no case has yet been reported where recovery has followed the removal of an intramedullary tumor; neither has a tumor been successfully removed from the ventral side of the cord. It seems to be the rule that the higher up in the cord the tumor be situated the worse becomes the prognosis.

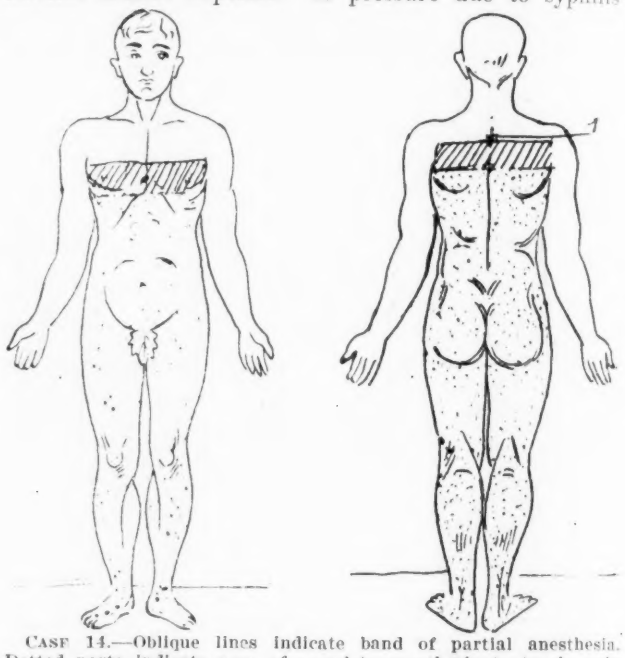
Provided a tumor of the cord is diagnosed, what is the surgeon's duty? Is he to operate at once on every case? Is he to wait for confirmatory symptoms, such as signs of degenerations or extension of paralyses? In regard to the first question the same principles should rule him as would were there any other organ concerned. He should ask: 1. Can the tumor be removed? 2. If irremovable can the patient be relieved by palliative operation? 3. What are the dangers of the operation? 4. What are the chances of permanent recovery? The nature of the growth—the structures involved and the damage already done to the cord are problems which as yet we are generally unable to solve, at least with certainty. Knowledge concerning the danger of operation is, however, more definite. While many cases have died as the direct result of operation and in others death has been hastened, the dangers at the present day should not be great. Certainly, a mortality directly due to operation should not be more than 10 per cent. Many of the reported cases where death followed within a week or ten days, were done years ago, when our methods were less perfect than they are to-day. Sepsis was the principal cause of death. At the present time we certainly would not expect this to occur in more than 1 or 2 per cent. of our operations. Death from shock or hemorrhage should result but rarely, certainly in not more than 5 per cent. of our cases.

Provided there is reasonable probability of the existence of a spinal tumor, and unless there be positive evidences that cure or relief is impossible, I would urge operation on every case at the very earliest possible moment. If it be postponed the chances of benefit become less with every day's delay. If no operation be done the outlook is hopeless. The result will be progressive pain, weakness and death.

Lloyd has collected 51 cases of operation for tumors of the cord, with a mortality of about 10 per cent.; 31 per cent. of these cases recovered. My own operations number 6. Of these none died as the result of operation. One patient at the end of more than a year is well; another at the end of two months. Two died from sarcoma of other organs. One died at the end of two months from sepsis due to bed-sores and cystitis.[2]

2. One, Case 1, reported as lipoma, should probably not be considered in this connection.

The possibility that the tumor is syphilitic, in the nature of a gumma, unfortunately, must be considered. I say "unfortunately," for the delay caused by this possibility has been responsible for the loss of many lives. It is rarely that a case of spinal tumor is not subjected to this treatment, which involves a delay of many weeks. Of the tumor cases which I have seen, with one exception, every patient has been subjected to antisyphilitic treatment. In one of my cases at least this treatment, or rather the delay, necessary for its test was largely responsible for the patient's death and I feel sure that most of you will recall similar cases. If a patient gives a syphilitic history it is certainly proper that the specifics should be tried for a reasonable time, but when no such history is given it seems to me most undesirable to soak the patient with mercury and iodid, and in the mean time allow bed-sores and other complications to develop, which render operative interference almost hopeless. If pressure due to syphilis



CASE 14.—Oblique lines indicate band of partial anesthesia. Dotted parts indicate area of complete anesthesia to touch, pain and temperature.

were common there might be some excuse for trying to relieve it by medication, but as gummata sufficient to produce the symptoms of pressure resembling those of tumor are very rare, it seems to me that it is generally wiser and safer practice, where there is lack of evidence of syphilis, to give the patient the benefits of an operation. Death which resulted in the following case may largely be attributed to such delay.

CASE 14.—Fibroma of lower Cervical Cord; Operation; Removal; Operative Recovery; Death in 43 days: Mrs. W., aged 37, had been a comparatively well woman until January, 1900, when she began to complain of some obscure abdominal pain. There was no history of syphilis or traumatism. In March or April, 1900, she began to complain of severe neuralgic pain, shooting around the chest just below the left breast. Soon after this she noticed numbness of her left leg and there was slight increase of both patellar reflexes. In the summer of 1900, her lower extremities became more or less paralyzed, and in August she began to lose control over her bladder and rectum. In September the paralyses in her legs became complete. The patellar reflexes became more exaggerated and any irritation to her body produced violent muscular spasms in her lower extremities. The neuralgic pain around the left side of the chest became very severe. Anesthesia of the body as high as a line drawn at the fifth or sixth dorsal nerve became complete.

Case 8.—Tumor compressing spinal cord. Actual size.

The patient was treated for weeks and months with mercury and iodid of potash. Her symptoms during the summer varied somewhat, being for weeks at a time of milder type, but in the autumn they became rapidly worse. In the meantime, due to the delay necessitated by the employment of antisyphilitic treatment, a foul bed-sore developed over the left hip.

The patient was sent to me for operation by Dr. M. A. Starr, with the diagnosis of tumor of the cord in the region of its fourth dorsal segment.

Operation Oct. 20, 1900. Chloroform. A 5-inch incision was made from the second to the sixth dorsal spine. The spines and laminæ of the second, third, fourth and fifth dorsal vertebræ were removed. A moderate layer of fat covered the dura. It was slightly purplish in color. It was opened for a distance of four inches. The pia seemed congested and bulged outward, caused by the excess of cerebrospinal fluid. It was punctured and an ounce or more of fluid escaped. The cord looked somewhat atrophied, but otherwise normal. The third and fourth posterior roots were picked up with a blunt hook and divided. A director, passed both inside and outside the dura upward and downward for two inches, met with no obstruction. The dura was sutured with catgut; the muscles and skin with catgut and silk.

Very little reaction followed the operation. For forty-eight hours there was some increase in the muscular spasms and some decrease in the pain across the chest. It was evident, however, that the lesion had not been found and judging from past experience we concluded that the tumor was situated at a higher point; and accordingly on October 23 the second operation was performed. An incision was made from the first dorsal or upper termination of the former wound to the fifth cervical spine. In the original wound there had been no attempt made at repair. It was perfectly clean, but there was no agglutination whatever of the skin or muscular edges. The spines and laminæ of the first dorsal, seventh and sixth cervical vertebræ were removed. Towards the upper end of the incision the dura for a space of two inches looked rougher and redder than normal and to it the ligaments had been slightly adherent. Superior to this point there was marked pulsation of the dura. It was opened through the whole length of the incision three to four inches, and at a point opposite the lower three-fourths of the seventh cervical vertebræ, the interspace below and the upper part of the first dorsal was seen a mass somewhat sausage-shaped, resting under the pia about an inch and a quarter in length, two-thirds of an inch in breadth, and half an inch in depth. Its color was pearly gray, slightly pinkish. The cord under it was practically concealed by the tumor, to which it was connected by a thin layer of connective tissue. It was completely encapsulated and was easily lifted from the cord by division of a thin fascia and removed entire. (At the former operation the opening of the dura had extended to within three-quarters of an inch of the lower end of the tumor. The dura was sutured with catgut and the wound closed.)

See colored plate, marked Case 8.

The operation was followed by comparatively little shock. For some days she complained much of pain in the wound and excessive hyperesthesia across the upper part of the chest extending a little above the clavicles. The muscular spasms soon ceased and she complained of no contraction or pain, except in the upper part of the chest and back of her neck. The bed-sores on her hips slowly increased in size and their base consisted of a sluggish, foul, sloughing area.

In a few weeks she began to develop evening temperature, and for weeks until her death her temperature ran a septic course due to absorption from the bed-sores. The pain in the neck and chest was so severe that anodynes were necessary. Her stomach became very irritable and it was with difficulty that she could be fed. Towards the beginning of December she began to have periods of delirium and semi-consciousness and she gradually failed and died on Dec. 3, 1900.

The wound remained clean throughout the course of her illness, but there was an entire absence of any sign at repair, its edges being kept together by silk sutures and adhesive plaster. On microscopic examination, the tumor proved to be fibroma, though it contained some cells suspicious of sarcoma.

It is, of course, of the utmost importance that the lesion be located before operation. One can not ruthlessly sacrifice spinous processes and laminæ, and a large flap is not practicable as it is in operations on the brain. The location within certain definite bounds can almost invariably be settled. It is impossible, on account of the anatomic arrangements, to assign a certain lesion to any one segment of the cord, but it is almost always possible to locate a lesion to an area embraced by three spinal segments. The reason for this is evident. There is no spot on the surface of the body and practically no muscle (with the possible exception of some of the deep small muscles of the back) which is innervated by one nerve root alone. The anastomosis between the sensory nerves is so perfect that every spot of skin derives its sensation from at least three or more nerve roots or segments, and every muscle derives its motor power from at least two segments of the cord.

In addition to this it is known that the afferent and efferent tracts run up in the substance of the cord for a considerable and according to location a variable distance, that degeneration will at times follow up these tracts for a considerable distance, perhaps two segments, before it reaches the real nerve center in the gray matter of the cord. As a consequence the cause of a paralysis or irritation of a muscle or of an area of anesthesia may, instead of being at the segment into which the nerve root supplying said muscle or spot of skin enters, be located at a point a considerable distance higher up in the cord.

This is one of the reasons why in many of the operations for lesions in the cord the spot selected as its site has been found to be considerably lower than the spot where the lesion is found at operations to exist. On this account more than one operation has been fruitless. Case No. 10 is a good illustration of this. The symptoms were most misleading and reliance was placed on published rules and tables and the lesion not found at operation. Fortunately the result was not affected by this failure.

A difficulty which not infrequently presents itself in these operations is the determination of the exact position of the different spinous processes. This is especially true as regards the cervical region, and in short-necked, fat females it is often difficult, sometimes impossible, to accurately locate the different spines. Errors because of this uncertainty have more than once been made, and I know of no rule whereby in certain cases various spines can be definitely located. In the cervical region it is, of course, easy to say, find the seventh or vertebral prominence and count upward. This is certainly easier than to count downward, beginning with the axis or atlas. But it is not always easy to determine which is the seventh spine. The sixth cervical as well as the first dorsal spines are often almost as prominent, and in a neck covered by adipose tissue it is sometimes difficult to distinguish between them. Likewise, in the dorsal and lumbar regions similar difficulties at times present themselves. Of course, in the former the ribs can generally be taken as a guide for locating the different spines, but, again, in stout people with strongly developed muscles this is not always easy.

Before considering the technique of the operation it may be well to make a few general suggestions in regard to spinal surgery.

1. The incision should be made as high up as possible. The main reason for this is that the nutrition of the

soft parts below the seat of lesion may be impaired because of destruction of the nutritive cells in the cord. Another reason of less moment is that the lesion has generally been found above rather than below its point of location.

2. The operation should be done rapidly. But few vessels need the application of artery clamps and still fewer of ligatures. If a bold incision be made the bleeding will not be great and can be controlled by the use of gauze pads held down by broad retractors. At times it may be necessary to pack one side or end of the wound with sponges and while these remain for a minute or two the operator can work at some other part of the wound. In my recent operations I have employed but very few artery forceps and often not a single ligature.

3. Ample space should be afforded for proper examination of the cord. For this purpose the removal of at least three laminæ is generally necessary. Of course, in cases of fracture, bullet or stab wounds of the cord the removal of one or two laminæ may suffice; but at least in cases of tumor one should be careful not to be hampered by too small an opening.

4. Support after operation of the spinal column by means of braces or plaster-of-paris jackets has not seemed to me necessary; indeed, it seems to me it adds only to the discomfort of the patient. An experience of nearly twenty laminectomies has convinced me that it is generally useless.

There are two methods of operation for exposure of the spinal cord:

1. By means of a vertical incision through the skin down to the tips of the spinous process and then division and separation of the muscles attached to these until the posterior arch of the vertebral column is well exposed. The spines and laminæ are then removed by bone forceps and no effort made to save the fragments for replacement at the close of the operation.

2. By means of an osteoplastic flap consisting of skin, muscle, and the posterior arches of the vertebra, the flap if single remaining attached by a hinge situated at one or the other side or end, or if double the hinge being in the middle. The advantages of the first method are greater rapidity, less hemorrhage, and better access to the cord. Its disadvantage is that because of removal of bone there must be left a gap in the posterior arch of the spinal column. I do not place much value on this objection, as in the majority of cases no special weakness of the back results.

The advantage of the second method is that the bony flap is replaced and consequently the posterior bony arch is completely restored. Its disadvantages are that the operation takes more time, more blood is apt to be lost, access to the cord is less satisfactory and there is a liability that the nerve roots may be irritated by resulting callus or imperfect adaptation of the bony surfaces.

My own preference is for the first method. Subperiosteal removal of the posterior arches is theoretically desirable, but practically it is very unsatisfactory. It is, however, desirable to retain attached to the muscles as much periosteum, ligament, and tendon as is possible.

In regard to the instruments most suitable for laminectomy each surgeon will probably have his own preference; mine is for bone forceps, and I know of none better than the old-fashioned rongeur forceps of Luër. The handles, however, should be made a little longer. Many other ingenious and equally useful forceps have been devised for this purpose. Saws, both hand and electrical, are employed by some operators and it is claimed that the removal of bone can thus be accomplished more rapidly. I have not found this to be the case with hand saws, and the use of electrical saws for this purpose has always seemed to me dangerous.

In my own operations a median incision five to seven inches long is made directly down on the tips of the spinous processes; the muscles and tendons on each side of these are divided by knife or scissors until the laminæ are exposed. From these the muscles are rapidly stripped, the bleeding being mainly controlled and the sides of the wound retracted by broad retractors, under which are held pads of gauze or sponges. The spinous processes are then divided at their base by heavy bone forceps. The laminæ well out toward the pedicles are then gnawed off by means of Luër ronguer forceps. Sufficient bone is removed to give a good exposure of the cord covered by its dura.

If the lesion for which the operation be done is not then seen the dura is opened and the cord with its nerve roots thoroughly explored. With proper precautions the increase of risk due to the opening of the dura should be only slight. If a tumor be found, its removal will depend on its character and situation. If benign it will be easily enucleated without hemorrhage. If malignant, hemorrhage may be severe if the growth has infiltrated into adjacent structures.

CONCLUSIONS.

1. The risk of the operation of laminectomy is slight.
2. Early operation is of the greatest importance. Operate before the onset of degenerate changes.
3. In tumor cases do not waste time with antisyphilitic treatment.
4. Operate rapidly. Employ but few artery forceps or ligatures.
5. Support of the spinal column after operation is generally unnecessary.

LAMINECTOMIES FOR FRACTURES AND DISLOCATIONS.

No.	Name and Age.	Date.	Time after Injury.	Lesion.	Results.
1	E. G., 33	June 4, 1890	8 months.	Pachymeningitis, old fracture, 4th cervical vert.	Recovery.
2	G. A., 65	July 13, '90	12 hours.	Fracture, 3d cervical.	Death in 12 hours.
3	J. H., 42	June 27, '91	7 days.	Fracture, 10th dorsal.	Death in 66 days; sepsis due to bedsores and cystitis.
4	J. T., 27	July 3, 1891	9 hours.	Fracture, 6th dorsal.	Recovery.
5	T. C., 41	June 1, 1892	6 hours.	Fracture, 7th cervical.	Death in 10 hours.
6	M. M., 35	Oct. 5, 1901	8 days.	Dislocation between 4th and 5th cervical.	Death in 12 days

LAMINECTOMIES FOR TUMORS OF THE CORD.

No.	Name and Age.	Date.	Duration, months.	Location.	Lesion.	Results
1	E. R., 50	March 29, 1894	5	7th and 8th dorsal.	* See note.	Death in 15 months from tuberculosis.
2	M. H., 42	March 6, 1894	11	5th dorsal .	Sarcoma . .	Death in 18 days due to sarcoma lung, pleurisy.
3	E. K., 39	May 22, 1900	28	2d lumbar.	Sarcoma..	At end of 13 months patient well.
4	Mrs. W., 37	Oct. 20, 1900	10	7th cervical.	Fibroma .	Death in 43 days; sepsis due to bedsores.
5	H. M., 30	Nov. 13, 1900	2	2d, 3d, & 4th lumbar.	Sarcoma...	Death in 5 months; exhaustion.
6	P. D., 46	May 28, 1901	5	2d lumbar.	Sarcoma...	Recovery.

* Reported in Am. Journ. Med. Sc., June, 1895, incorrectly as lipoma of 10th dorsal. Future history of case showed it to be tubercular disease of the 7th and 8th dorsal.

SPINA BIFIDA OR HYDRORRHACHITIS.*

PAUL F. EVE, M.D.
NASHVILLE, TENN.

Spina bifida or hydrorrhachitis is a congenital malformation consisting of a cleft in the vertebral column with protrusion of the lining membranes of the spinal cord.

This deformity is caused by an arrest of ossification of the vertebral arches, and is situated in any region of the vertebral column. It is more frequently found in the lumbar region, which constitutes about 50 per cent. of all cases; there are probably about 12 per cent. in the lumbo-sacral region, and about 25 per cent. in the sacral region. It is frequently associated with other congenital deformities, such as hydrocephalus, talipes, harelip, etc.

It consists of a tumor, varying in size from a marble to an adult's head, and occupies the central portion of the canal over the posterior aspect of the vertebral column, and is intimately connected with the canal in which a gap is felt in the bones of the vertebra upon raising the tumor. The tumor is elastic, smooth and fluctuating, and in some instances wholly translucent; in other cases it is covered by integument, which may be normal in character, but more often the skin is thin, covering the base and sides of the tumor, or finally emerging into the transparent membranes, which forms the apex of the growth. In some cases the tumor is peduncular, in others sessile.

In this malformation there may be entire division of the vertebræ, involving even the bodies, with partial or complete absence of the lateral arches; or there may be perfect development of the lateral arches with the want of union at the median line. This protrusion generally takes place during the latter months of the fetal life; it may, however, be unobserved until some weeks or months after birth.

At present there are recognized three distinct varieties of this affection: 1, meningocele, the protrusion consisting only of fluid held in the membranes of the spinal cord; 2, meningo-myelocele, where we have the addition of a portion of the cord in the sac; and 3, syringo-myelocele, the central canal of the spinal cord being dilated, thus forming the cavity of the sac.

This is, as we are all aware, a very fatal affection, few children surviving longer than five or six months after birth, many dying before that time. Death usually occurs from convulsions, or ulceration and rupture of the sac. If the sac is ruptured during parturition, the infant is nearly always stillborn; and if it becomes open after birth, death usually follows in a few hours, the immediate cause of death being convulsions from the pressure being taken off the brain in consequence of the loss of the cerebrospinal fluid.

In the diagnosis of this affection there are some very important facts which should be borne in mind. The tumor is congenital and occupies the central portion of the posterior aspect of the spine. By pressure it is diminished in size, tension being easily seen at the fontanelle. By raising the tumor we are often enabled to discover the loss of the spinal arches and map out the bony margins of the spinal bodies; and when the child cries or coughs the tumor becomes more tense.

On account of the very fatal termination in the majority of these cases it can be readily recognized that the surgeon is warranted in pursuing any treatment which promises a prolongation of life or a radical cure. This treatment we can readily divide into palliative and radical. In the palliative treatment, when the tumor is small, or of moderate size, considerable pressure should be exerted upon it, either by the application of collodion, or a cup-shaped truss either made of surgeon's wool or some soft material, this pressure being maintained by a common roller bandage or adhesive strips. This treatment is suggested by a few accidental cures which have resulted by pressure being exerted by binders, which have been inadvertently placed tightly around the child's body, and in this way compressing the tumor. Some surgeons supplement this treatment by acupuncture, their method being by repeatedly pricking the thin portion of the cyst wall with a fine needle, allowing the fluid to ooze away upon an aseptic dressing; another method, following a similar course, is by tapping the cyst with a fine trocar and cannula, one or two drams of the fluid being drawn off at each tapping, gentle pressure being maintained either by pads of wool or cotton or the application of collodion.

In 1848, Dr. Brainard reported a number of successful cures by the injection of iodin into the cyst. The rules laid down by him are: 1, to make a puncture subcutaneously in the sound skin by the side of the tumor; 2, to draw off no more fluid than the quantity of fluid to be injected; 3, to evacuate the contents of the sac and, if symptoms of irritation supervene, to replace this fluid immediately with distilled water. The solution he generally used was iodin and iodid of potassium in the proportion of one-quarter grain of the former and three times the quantity of the latter to one ounce of distilled water. Morton's fluid has been lately employed more or less with success, and consists of 10 gr. of iodin, 30 gr. iodid of potassium to 1 oz. of glycerin. Two drams of the fluid are generally drawn from the cyst walls and replaced by the same quantity of this injection. These injections are repeated at intervals of from one to three weeks, so long as inflammation continues.

The radical operation consists in the excision of the sac. Dr. Bayer has reviewed the whole subject of spina bifida, and has discarded the treatment by acupuncture, seton, or trocar, and he condemns the injection of iodin or other irritants into the sac, and considers this condition to be one analogous to hernia, and suggests that the treatment of this affection should be maintained upon the same lines. He points out the danger of meningitis following this plan of treatment is no greater than that of peritonitis following the treatment of hernia, and as compared with the operation for hernia is both safer and more certain of success.

It does seem to me, from the statistics gathered from the treatment by tapping followed by the injection plan, the results of which have been most unfortunate, we are warranted, especially in this aseptic age of surgery, to treat this affection after the suggestion of Bayer; especially when the tumor is small and peduncular. Some very brilliant results have followed this plan of treatment. The outlines of the operation are as follows: An incision is made through the skin on each side of the tumor about an inch from its base and two flaps are carefully dissected off the tumor, the sac is then punctured, withdrawing the fluid, and the sac so cut and separated as to leave two flaps, one longer than the other. Should the nerves or portions of the cord be found adherent to the sac, they are carefully separated from the wall of the cyst and returned to the spinal canal. These flaps are now sutured, the approximation

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

being so close that leakage will be impossible; the skin flaps are now brought together by silk or silkworm gut sutures, and should there be a deficiency of skin for covering, sufficient amount can be obtained by dissecting the skin from the loin and transplanting it.

In looking over the literature on the subject of operation by extirpation, I found among some of the rules laid down the following: Extirpation is unjustifiable in very young infants; in cases complicated by extreme hydrocephalus, paraplegia, or serious nerve lesion; and again, where also the disease is very extensive and the want of a normal amount of integument is inadequate for covering the outside of the cleft. The indications advised for such an operation are as follows: Where the child is over 7 or 8 years old, and where the tumor is rapid in its growth, rupture threatened, and where normal skin is abundant for covering.

In consulting the authors on this subject, I am also impressed with the fact that the great majority of them are united in condemning the ligation of the sac. I therefore desire in this connection to report the following very interesting case:

On March 5 I received a communication from a local physician, stating that he had under his observation a baby of tender days, who had a fatty tumor upon the back, and which had a nevus developed upon its most salient point. The tumor, he also stated, had been growing quite rapidly in the past three weeks, and he was exceedingly anxious to know what course to pursue. I advised him to bring the child to Nashville for an examination, which he accordingly did on the evening of March 18. On the next morning, in conjunction with Dr. W. A. Bryan, I called upon the family and made a very careful examination of the baby. I found a tumor between the scapulæ, situated in the median line of the spine, about the size of an orange, translucent for about three-fourths of its diameter, globular in shape and pedunculated.

The base of the tumor was covered by normal integument. My examination also disclosed a cleft in the spine corresponding to the fifth dorsal vertebra, and I was enabled to discern the absence of the lamina and the connection of the tumor with the central spinal canal. The head of the child was drawn backward, and was apparently too large for the size of his body; there was, however, no bulging of the fontanelles, their closure being about normal for this period of life.

The following history was obtained from the mother: The family history on both sides was excellent, with not a single trace of deformity in any other member of the family, both lines having arrived at an advanced age of life. The child was born on Dec. 27, 1900, and weighed 5 pounds at his birth. Shortly after birth the mother noticed a tumor about the size of a partridge egg, with a nevus over the most salient point, and which, she informed me, grew rapidly from the date of the child's birth, increasing when the child cried, and producing a slight bulging of the fontanelle, which was also noticed when I made gentle pressure upon the base of the tumor.

I gave it, as my opinion, that we had a spina bifida to deal with, which was concurred in by my consultants, and that on account of the rapid growth of the tumor and the attenuated condition of the sac, together with the small size of its pedicle—which in diameter was only about 1 to 2 inches—that the best procedure would be total extirpation and advised an operation. The consent of the parents and consultants being obtained, the patient was prepared for an operation, which was performed on April 20.

I was assisted in the operation by Dr. W. A. Bryan. Chloroform was the anesthetic chosen, but as the patient did not do well under this anesthetic, it was changed to ether, which proved very satisfactory, the patient standing it excellently during the whole of the operative procedure. An irregular incision was made at the base of the tumor, the object being to obtain as large a skin flap as possible. The skin was dissected from the sac, which required a very delicate dissection for separation, and the pedicle disclosed, which upon examination proved to be about the size of a quarter dollar. The pedicle was seized between two fingers for the purpose of seeing if there were any spinal nerves in the contents of the tumor, but none being discovered by this examination, a clamp was carefully adjusted to the pedicle and symptoms watched. Nothing of an alarming character developing, the sac was opened at its side and drained. This incision was now enlarged and a very careful examination made of the contents of the interior of the sac, which proved to contain nothing but cerebrospinal fluid. The pedicle was now transfixed beneath the clamp by a needle loaded by a double silk ligature; this was interlocked and the pedicle ligated. The stump of the pedicle was stitched by a double row of catgut sutures and made perfectly water-tight; the skin flap—which proved abundant—approximated by silk sutures and the wound dressed.

From March 20 to March 25 the temperature was below 100 F., with corresponding pulse rate and respiration; the first dressing was made at this date and no leakage discerned. On the evening of March 25 the temperature rose to 103 degrees, which proved to be due to a stitch-wound abscess in the skin flap; this stitch was removed and the wound thoroughly cleansed and dressed.

The temperature from this date immediately decreased, the wound being dressed each day, and on March 27 it struck the normal line. The remaining silk sutures were removed on the seventh day, the wound found almost healed, and from this date the child made an uneventful recovery, and was dismissed entirely well on April 8.

In conclusion, I desire to call attention to the following points:

The child I operated on was less than three months old; the tumor was rapid in its development, and threatened rupture was imminent; the pedicle was small, and consequently easily dealt with.

With authors to the contrary, I claim the only conservative plan that could be adopted is the one carried out in this instance; which leads me to say that, in the vast majority of cases, each individual surgical case is a law unto itself, and we have to exercise that good common sense, without which surgery would be at a standstill.

Cacodylate of Soda.—A correspondent calls attention to the editorial in THE JOURNAL for August 17, p. 455, on "Cacodylic Acid." He says: "There is an error in calling this cacodylic acid, for cacodylic acid as such is not used medicinally to any extent, but the sodium salt, known as 'cacodylate of soda,' is extensively used in some parts of the country, and I have had a broad experience in observing its effects. The cacodylic acid has been known for many years as possessing the virtues of arsenic, but it could never be used satisfactorily until it was combined with a sodium base. It is now used both hypodermically and internally, and I consider it one of the best remedies we have for many conditions."

THE IMMEDIATE AND REMOTE EFFECTS OF BRAIN INJURY.*

D. S. FAIRCHILD, M.D.

Professor Surgical Pathology, Medical Department, Drake University; Surgeon, St. Joseph Hospital.

CLINTON, IOWA.

Immediate Effects.—The phenomena which immediately follow as the result of brain trauma are interesting chiefly on account of their diagnostic value in revealing the nature and extent of the injury and are of some importance in determining the questions of prognosis and treatment. It must be considered, however, that in many cases the early manifestations may not reveal the seriousness of the lesion fully and may be misleading. On the other hand, the first symptoms may indicate a more grave condition than the subsequent history will confirm.

The early symptom most generally observed in serious head injuries is a state of unconsciousness. What this may signify can not always easily be determined from the symptom alone. The question of importance in this connection to be considered at an early moment is, whether the unconsciousness is from hemorrhage, or from concussion or contusion of the brain. The manner in which the injury is received is of the utmost importance in determining this question.

1. Whether the patient has fallen from a height, striking on his head in such a manner as to produce a serious lesion at the base of the brain.

2. If a direct blow has been received on the convex surface of the skull and of such a character as to produce a lesion in the cortical or subcortical brain substance. Having determined with reasonable certainty that the lesion is in the convexity of the brain, the value of ascertaining whether or not a considerable hemorrhage has occurred is very great in determining the immediate result of the injury and the treatment to be employed. The nature of the blow and its location may be of some importance, but can not always be relied upon. For instance, it is known that a man has received a blow on his head, but when he comes under professional observation, the marks of it may have been so completely obliterated, or may not have existed at all, or may be so general in character as not to reveal where the force of the blow was applied, and unless there are some focal symptoms the surgeon may be in serious doubt as to what has really transpired within the cranial cavity, and he patiently but inconsiderately waits for consciousness to return while an increasing hemorrhage is going on.

The unconscious state in itself will not reveal whether it is due to concussion or hemorrhage—except the hemorrhage from a cerebral artery, as in an apoplexy—and as the hemorrhage due to trauma is generally meningeal it does not produce the coma of a cerebral hemorrhage. While the general manifestations of unconsciousness do not indicate the cause, the manner of approach is in many cases significant. The appearance of the unconscious state some minutes or an hour or two after the accident or the return of consciousness after a primary loss, followed shortly by a reappearance of the former state, are almost diagnostic.

The unconsciousness due to hemorrhage is of course a pressure unconsciousness, and if the pressure is from a fracture with depression, the physical condition will reveal the fact, or if the marks of violence are found over the region of the middle meningeal artery, the fact should be very helpful in our diagnosis. If then the first symptoms of intracranial injury are determined to be from a rupture of a meningeal artery, particularly the middle meningeal, the immediate effects of the injury may be regarded as serious unless a prompt surgical procedure is employed. Three cases are now presented illustrating the foregoing observations:

FIRST SERIES.

CASE 1.—A brakeman was found lying on top of a freight car in an unconscious state. The cause of injury and the immediate symptoms were unknown. No marks were found on his person. He came under my care three days after the injury. He was unconscious, but somewhat restless when disturbed. There were no focal symptoms, but the long-continued unconsciousness was significant of some serious brain injury, which it seemed proper to especially inquire into. When the scalp was shaved there appeared to be a slight tumefaction in the anterior temporal region. The skull was exposed, a linear fracture was found crossing from frontal bone into parietal without displacement. Trephined over middle meningeal artery. A large clot of blood was found from rupture of artery. Clot removed, patient recovered and finally resumed work.

CASE 2.—A fireman struck his head against the side pieces of a bridge; train not moving rapidly. He was picked up in an unconscious state. I saw him three or four days after the accident. He was still unconscious. Paralysis of right arm, right leg and right side of face. Diagnosis: Compression from sub-dural hemorrhage, left side. Attending physician and friends opposed to operation at this time and trephining was not resorted to, contrary to my judgment. A week later he began to manifest evidences of returning consciousness. It was then discovered that he was completely aphasic! Could produce unintelligible sounds, but could not utter a word. In about three weeks was able to say, "yes," and "no." Could move his paralyzed leg a little, improvement appearing in face, speech and lower extremities in about equal degree, reaching arm and hand last, i. e., the pressure was greatest and most persistent in motor centers for arm and spreading out above to centers for lower extremities and below to face and speech centers. Cleared up in upper and lower extremities of motor area first and approached middle points last. The man made a complete recovery and resumed his employment as a fireman. I have always doubted the wisdom of the let-alone treatment as a principle in brain surgery, notwithstanding the fact that this patient recovered without operation.

CASE 3.—A young man, 24 years old, received a blow in the right temporal region from the fist of a companion during a controversy. The man was not knocked down, and it was supposed that he was not seriously injured. Walked to a house near by. Soon after complained of a headache and dizziness. Laid down on a couch. Two hours later he was found unconscious. After an interval of two hours more, he was seen by a physician, who apparently did not regard the case as serious. During the night the man died. Was present at autopsy ordered by coroner. No fracture of skull. Rupture of middle meningeal artery with a large hemorrhage which produced the fatal result.

The three cases above referred to illustrated three important classes of facts in relation to head injuries: 1, an indeterminate degree of trauma without definite symptoms to indicate the extent of injury; 2, an indeterminate degree of trauma with definite symptoms of a focal character; 3, a definite degree of trauma with definite symptoms to indicate the nature of the lesion. All were cases of hemorrhage and amenable to surgical treatment. All were due to direct violence applied to the head without the complicating influence of falls in which the weight of the body adds an important factor in

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: W. J. Mayo, H. O. Walker, and A. J. Ochsner.

damaging the brain at points remote from the application of force as seen in another series.

SECOND SERIES.

CASE 1.—A young lady was riding in a platform spring wagon. In crossing a bridge, the bridge fell a distance of 20 feet, striking on the surface of the water. She was not thrown from her seat and was apparently not much injured. She disengaged herself and walked a distance of nearly a half mile for help. Returned home and was apparently well for three days and then began to manifest speech difficulties. The aphasia increased and finally became complete. There was twitching of the muscles, particularly of right side. Became dull and stupid. Had a rise of temperature and finally fell into an unconscious state. She developed secondary pneumonia and died thirty days after the accident. I saw her a few days before she died and afterwards assisted in the autopsy. It was shown that at the time of the injury the left second frontal convolution and striate body were lacerated, establishing a communication between the left lateral ventricle and sub-arachnoid space. From this focus a process of softening had extended into the left third frontal and farther into the striate body. The vessels in this region were much congested and there was a considerable increase of cerebrospinal fluid tinged with blood. There were no clots and the blood seemed to come from numerous ruptured capillary vessels.

CASE 2.—A man was sawing off a large limb from a tree twenty or thirty feet from the ground, and was sitting on a limb below. When the sawing was nearly complete the limb fell, striking him in the head and carrying him to the ground. He was found unconscious, with an ugly and extensive scalp wound in right parietal region. No fracture of skull. The location of the wound and the symptoms taken together apparently excluded hemorrhage. On the third day skull trephined at seat of injury. Dura tense and pulseless; incision was followed by the escape of considerable clear serous fluid. Drainage provided for. Fluid continued to escape freely for several days, when the patient died. No autopsy. It was presumed that the combined effects of the blow and the fall produced such widespread damage to the brain as to result in death. The skull was very thick, and no doubt offered great resistance to fracture influences.

CASE 3.—A brakeman was thrown from a freight train in a collision. Train moving rapidly. He was found unconscious, with many bruises on his head. Saw him on second day. No fracture of skull discovered. No focal symptoms, but unconscious. Trephined at the point of apparent greatest injury—in right temporal region. Dura protruded into opening, pulseless; incised dura, a considerable quantity of clear fluid escaped with some force. Brain considerably depressed at this point by the accumulated fluid, but came up after being relieved of pressure. The man died a week later from an injury to the lung by a fractured rib. He is said to have shown signs of returning consciousness.

The above cases are selected to show the influence of much more violent injuries to the brain from the existence of more widespread influences in the organ itself. In the first series the force of the injury was expended upon a distinct and circumscribed area of skull surface and produced lesions in the brain of limited extent—chiefly pressure influences arising from hemorrhage. These cases, from the nature of the injury and the location, together with the symptoms following, point so clearly to what has transpired in the skull that a careful consideration of all the facts ought to lead to an early diagnosis and an operation for the relief of conditions, which are easily within the reach of the surgeon and which promise the most brilliant results.

The second series of illustrative cases present certain important pathologic facts. The direct injury to the brain may not have been more serious in its effects than in the first series, but the indirect influence of the fall, the jar to the skull contents and the movements of the cerebrospinal fluid may have effected more or less widespread contusion or laceration of the brain.

The first symptom—unconsciousness—may present identically the same phases and leave nothing in this respect to differentiate the two classes of cases; but when the surgeon carefully considers the history of his case in so far as to estimate the nature of the force and the manner of its application, he will be able to more than make a guess as to the gravity of the case, its prognosis and the principle of treatment to be employed.

A third series of cases illustrates the effect of a more limited area application of force than the first. The damage to the brain will chiefly depend upon the part of the brain involved, the extent of brain penetrated, the question of infection and the treatment employed. A variety of the class of cases here considered is well known to the military surgeon who has had actual experience in an active campaign. For obvious reasons I shall omit any particular reference to gunshot wounds of the brain and consider only such injuries as occur in civil practice. These cases are not generally dangerous to life if proper consideration is given them early; on the other hand, neglectful care at an early moment is liable to be followed by brain infection, particularly so if the surgeon fails to sufficiently explore the wound to remove fragments of skull and other foreign bodies which may be driven into the brain.

THIRD SERIES.

CASE 1.—A farmer was stacking hay, using a hay fork moved by horse power. The frame-work over his head fell in such a manner that the end of a projecting bolt struck him in posterior frontal region. The skull was penetrated. As soon as possible I examined the man and found a punched-out hole about ¾ inch in diameter. This was enlarged sufficiently to permit of an exploration. Some fragments of bone and a piece of felt hat were removed from the brain. The patient recovered without sequelæ.

CASE 2.—A boy, in an attempt to jump on a moving freight train, fell and lost his right arm at the shoulder joint, under the car wheels. At the same moment the end of an exposed bolt struck him on right frontal bone just above the hair line. When placed on the operating table he had a series of convolutions, which subsided when anesthetized. The bolt had penetrated the skull, carrying into the brain some fragments of bone. The opening in skull enlarged and fragments of bone removed. Recovered without any mental impairment.

CASE 3.—A young man was struck in frontal bone just below hairy scalp by a pistol ball. The ball split on the outer table of skull. It was found that fragments of bone had been driven into the brain causing some laceration of brain tissue. The fragments were removed after enlarging the opening sufficient to explore with finger. Patient recovered without mental or other nerve impairment.

The treatment of these cases involved no difficulty whatever, but if it had not been employed promptly with a view to meeting certain cardinal principles of surgery, infection would certainly have occurred early with the most disastrous results. The cases of the character above described were not followed by any remote effects. It will be observed that the anterior lobes of the brain were injured in all these patients. A similar series could be presented where the injury was to the posterior region of the brain with less fortunate termination, both as to immediate and remote results, particularly the latter. It has been observed by a number of writers that injuries to the posterior regions of the brain have been more serious than similar injuries to anterior portions.

Remote Effects.—The second section of this paper relates to the remote effects of brain injury. The cases referred to, as a rule, present no alarming symptoms immediately after the injury, and many of them present no indications for operative procedures. Others apparently do not make exception to the surgeon who has had considerable experience in brain injuries. They include cases which the practitioner believes will recover if left to themselves, and yet the experienced surgeon can see indications which point to serious results in the future, although as to the present recovery may be confidently expected.

I find it convenient to group the cases into two classes: 1, those involving pressure lesions, manifesting focal symptoms or irritation lesions, expressing themselves in Jacksonian epilepsy; 2, those involving nutrition lesions resulting in more or less extensive sclerosis manifested by mental symptoms of a more or less marked degree.

The importance of considering with care all cases of injury to the head which may produce lesions in any degree amenable to surgical treatment is very great. Experience has abundantly shown that if a course of waiting is permitted for future results, when the sequelæ are actually developed, an operation is then too late to cure what might have been prevented.

In the first class above referred to of cases considered in relation to remote effects of head injuries, may be included cases of fracture with depression and without symptoms, and cases suspicious of depression, or hemorrhage with focal symptoms. Fracture with depression and without symptoms will from the nature of things exercise a localized pressure upon the brain surface and particularly if a rough edge or spicula of bone bears upon the dura, and lead in many cases to irritation and local nutritive changes in dura, and pia-arachnoid with adhesions to cortex and even connective tissue formations in the cortex itself. In other cases where the examination shows no apparent fracture or depression, focal symptoms appear proving conclusively that a pressure lesion exists in the cortex, which in time results in organic changes in the brain giving rise to unfortunate sequelæ, and when the results do appear the effect of a late operation is always problematic. From my own experience I can not see what excuse can be offered for a neglect to restore, as far as may be, normal conditions by an operation. It is no doubt true that in some instances no serious results follow from the class of injuries above referred to, but the experience of surgeons point to so many individuals whose usefulness has been seriously impaired by secondary brain changes that the most thoughtful consideration should be given them and operative procedures should not be withheld when a doubt exists.

A child 2 years of age, while sitting in a high chair, was in some accidental way thrown backwards, striking the back of its head on the floor. The occipital bone was somewhat depressed. Some time later it was noticed that the child could not see well, and when it came under my notice two or three years later was totally blind. There was plainly pressure on the occipital lobe with certain secondary changes, leading to total blindness.

A young man was standing on the railroad tracks at a street crossing, watching an approaching train. An engine came along on the track on which he was standing and knocked him off. He was unconscious for two or three days. His physician found a scalp wound crossing from left to right parietal bone in posterior region, but no fracture. It was noticed during the period of unconsciousness that the right leg did not move freely, but the doctor saw no significance in this fact. Two months later I saw the man as the medical officer of the railway company, and found a scar two inches in length extending from left to right side of median line in posterior parietal region. The principal force of the blow was on left side over superior parietal gyrus or over leg center. Result was incomplete motor paralysis of right leg. No doubt a pressure lesion from a depressed fragment of bone existed. He refused treatment on account of a prospective claim for damages. Doubtless the unfortunate remote result could have been avoided by proper early surgical treatment.

In a small percentage the traumatic aseptic focus in the brain becomes the point of departure of lesions leading to a slow process of interstitial sclerosis more or less extended. These local disturbances of nutrition are closely connected in many of these cases with a permanent pressure irritation arising from untreated lesions which are within the reach of the surgeon and follow unwise conservatism.

In my own experience no case has occurred in which a localized lesion in the brain has been followed by either epilepsy or insanity when early operative treatment has been employed, except in wounds of the brain which have healed with scar production; while on the contrary, I have opened the skull many times at the point of an old injury for epilepsy or mental derangement with uncertain benefit and found localized organic lesions in the brain which I am quite sure in most cases could have been avoided.

The second class of head injuries are not uncommon and are particularly serious in regard to future results because of the fact that they involve widespread minute lesions which remotely affect the nutrition of the brain and bring about changes in the delicate mechanisms of the organ. The more diffuse sclerosis of a more widely extended nutritive disturbance is quite beyond the reach of the surgeon and the sequelæ must be regarded as permanent.

I have among my list a number of cases, particularly among trainmen who have fallen from rapidly moving trains and received head injuries, the symptoms of which precluded the probability of a fracture of the skull or of any localized hemorrhage, but were unconscious for several days. The return to consciousness was preceded for several days or weeks by a mild delirium, but they finally regained their mental balance, returned to work, and continued their employment for a few months or a year when it became necessary to discharge them from service on account of a developing insanity. The pathologic condition, as it appeared to me, was a more or less widely diffused connective tissue proliferation or a chronic meningitis.

Among localized brain injuries which should be excepted when considering trauma, may be mentioned scar proliferation from wounds of the brain itself. The scar thus produced may remain as a permanent condition or may undergo cystoid or other degeneration developing late symptoms. In a limited number, these cases are amenable to surgical treatment if considered early.

An interesting case of this kind came under my observation a few years ago. A boy 9 years of age received a gunshot wound. The ball entered the orbital plate near the inner angle of right eye and escaped from right parietal bone posterior to the upper end of the fissure of Rolando, passing through the fibers of the

internal capsule. I saw him six years after the accident, on account of the appearance of the premonitory symptoms of epilepsy. The boy had suffered no mental impairment, but the opposite arm and leg had not grown equal in length or size with those of the right side and he could use them but imperfectly. The scar tissue at point of exist of ball was dissected out. The opening in skull was enlarged and brain exposed. A well-developed cystoid scar was found and dissected out with complete relief to the epileptic symptoms.

Simple and compound fractures of the skull are omitted, except in so far as they relate to hemorrhage or future conditions of the brain. It is only intended to consider varieties of injuries which present elements of doubt as to what has occurred within the cranial cavity concerning immediate results which may interest the surgeon and the question of remote effects which may or may not be in a measure under the control of surgical treatment.

A large percentage of the cases referred to in this paper have possessed elements of liability either on the part of corporations or individuals and have potentially or in fact been the subjects of medico-legal investigation. For this reason not only have they been considered from the standpoint of the operating surgeon, but also for the purposes of an expert opinion. The observations referred to are now of great service to me in determining at an early moment the probable pathology of brain injuries with the view of obtaining the best practicable immediate results with as clear a conception as possible of what the future may bring. The following conclusions are offered:

1. Violence of no great intensity when applied to a limited area of skull may cause a fracture with only momentary displacement with a rupture of a meningeal artery, or a rupture of an artery without fracture.

2. A localizing injury which may lead to a fracture without displacement and hemorrhage does not as a rule cause a serious permanent brain lesion if early and judicious surgical treatment is employed.

3. A fracture may occur without apparent displacement, yet a real localized pressure on the brain exist which may cause irritative changes involving a more or less extended sclerosis and remote secondary results, as epilepsy or mental impairment.

4. A blow may be received on the head which may produce a more or less extensive laceration of the scalp which in itself is not serious. But the fall from a height or from a rapidly moving train may produce more or less extensive contusion or laceration of brain tissue leading to serious immediate or remote effects.

5. A fall from a height or moving train may without a fracture cause directly or indirectly a contusion or laceration of brain tissue or so disturb the cerebrospinal fluid as to primarily bring about such changes and cause immediate results or secondary serious remote effects by inducing degeneration and final interstitial changes producing insanity.

6. An injury may be of such a character as to produce a localized wound of the brain that may heal with the production of scar tissue which may extend, may or may not undergo cystoid or other degeneration with serious remote effects.

7. In the absence of localizing or other definite symptoms to indicate the nature of the lesion, the character of the accident and the manner in which the force is applied is of great value in reaching a conclusion as to the probable nature of injury to the brain.

DISCUSSION IN SYMPOSIUM ON SURGERY OF THE BRAIN AND SPINAL CORD.

DR. W. W. KEEN, Philadelphia—I think Dr. Eve has taken in his paper the proper ground in reference to the treatment of spina bifida. The time was when the injection of Morton's fluid, tapping, etc., were all we could do, but with the advent of modern cerebral and spinal surgery, and especially the introduction of the antiseptic and aseptic methods, I think we ought, except in occasional cases, to advocate such a treatment, and subject our cases of spina bifida to operative treatment, with or without closure of the opening in the spine, according to the nature of the case.

In Dr. Fenger's paper,[1] I was disappointed, in that he limited the exploration to the search for pus. We must have a very clear distinction in a methodical exploration of the brain for collections, either of pus or of purulent or semi-purulent fluid or of serum in some cases which may be outside the ventricle, but yet in the substance of the brain, or in other cases which are distinctly in the ventricles themselves. I have employed very much the same methods which he has advocated, by various instruments, especially for exploration outside of the ventricles, but, of course, in the texture of the brain itself. In the ventricles, however, we can also find fluid. More than ten years ago I proposed as a methodical operation and I formulated the process of several routes by which the ventricles themselves could be reached, and the ventricular or other fluid that may be there could be evacuated from the ventricles and the ventricles washed out—even irrigated from one side to the other. Unfortunately, a very elaborate paper which I presented at the International Medical Congress in Berlin was lost by the secretary and as I have no copy I have never had enough leisure to pursue the subject again; in that paper I have gathered all the recorded instances in which the ventricles have been opened by accident or design, and I will show very clearly that opening the ventricles is not the dangerous procedure or the dangerous accident that has been supposed. Within about six weeks I have had a very remarkable case and wholly an exceptional one in my experience, a young man who, in 1892, was thrown from a horse and had his skull fractured in the posterior lateral region on the right side. Epilepsy supervened seven years afterwards, in 1899, and I trephined him about six weeks ago, because at the time of his accident, there having only been small bits of bone removed, it was possible that there might be some lesion inside of the skull which had not been discovered. After I opened the skull I found the dura and opened it and evacuated a considerable quantity of fluid, and then at a distance of a centimeter (in size), not having seen any of the cortex of the brain, I found the skin over this membrane was scarcely as thick as the lining which covers the inside of an egg. It contained fluid, color dark. On incising this, a large amount of fluid escaped. Doubling up a bit of silkworm-gut to make a measure and yet not too sharp to puncture the brain tissue, I passed this in and found that I entered the cavity 10 centimeters in depth. Finding so large a cavity and desiring to know the nature of it, I incised a little farther this inner membrane. Then, to my astonishment, when I separated the edges and looked in by means of the electric light, I found that I opened widely the lateral ventricle. There was no free cerebral tissue arching over the lateral ventricle at all. Whether this had been absorbed as the result of accident or whether it had been destroyed as the result of accident, I can only surmise at the present time. I confess I was greatly startled when I saw this large open cavity with its choroidal plexus; I was perplexed to know what to do, but afterwards I concluded, in view of the fact that there would be some hemorrhage, that it would be proper to drain for a time. I inserted a small amount of gauze and brought this outside of the scalp wound which I then closed. To make a very brief story, next day I removed the drainage. Twice after that I was obliged to insert a pair of forceps, at once evacuating a considerable accumulation of fluid, which produced headache and which seemed to portend the possibility

1. Dr. Fenger's Paper on "Methodical Exploration of the Brain for Fluid" has not yet been handed in for publication.

of epilepsy returning and the man recovered. Two weeks after the accident he had two or three epileptic attacks in the course of one day. Since then, as far as I know, he has had none. But, of course, the time passed is too short to decide whether any permanent good will be done or not. I fear not, but the proposition that presented itself to me was that open ventricle, opened practically its entire length. It was totally new and I was very happy indeed to feel that the solution apparently seemed to be the correct one.

As to Dr. Fairchild's paper, I was very much interested in it and I think he has taken quite the right ground that interference is imperative upon us in these cases. In hemorrhage, of course, of a typical character, we have the three consecutive stages which are so important for us to recognize, namely, unconsciousness or partial unconsciousness of stunning from a blow; the recovery from this, and then, later, as either drop by drop, or in large quantity, the blood accumulates, the secondary unconsciousness which is due to pressure from the blood clot; but we must draw very sharply in our minds the distinction between the two totally different rates at which the blood accumulates. If you have a small rupture, a little laceration of a small branch of the middle meningeal or middle cerebral, you will have little leakage of blood, that will come drop by drop and you will have the period of secondary unconsciousness postponed. Or, if on the contrary, a large branch, and especially the main branch of the middle cerebral, ruptures, then you have the blood pouring out so rapidly that the period of unconsciousness between the two is obliterated. After the man recovers from the unconsciousness of stunning or blow, the unconsciousness is very apt to overlap. The other of the two experiences I had, was one of a man who fell to the floor of his barn from a hay-mow. I saw him three hours after the accident. There was no fracture of the skull. He had two or three wounds of the skull which I explored, but found no fracture. He was absolutely unconscious with stertorous breathing, with no paralysis; there was no motion; no method of determining voluntary or involuntary—I mean no paralysis of one side of the body. It was clear to my mind that we had a large hemorrhage in the skull. Which side was it? You have absolutely no guide in the matter of paralysis in one side or the other—only one trifling guide, which, however, proved of the greatest possible value. Though both pupils were dilated very much, on the left side the pupil responded very slightly to light, but did not respond to light on the other side. I judged, therefore, that upon the right side was the clot and I determined to trephine at once and if I did not find any clot to go up on the other side. The moment I trephined on the right side I found an enormous clot. The brain substance was pushed away from the inner surface of the skull and both the anterior and posterior branches of the middle meningeal were found ruptured and bleeding. The injury was so severe that life could not be carried on and in consequence of it the man died in the course of a few hours. I had used it, not so much by reason of the result as because it illustrates very well how the very fact of that pouring out of blood may make the period of unconsciousness overlap the second and obliterate the intermediate stage and enforce the proper treatment—especially the diagnosis by means of the very slight reaction of the pupil. On the contrary, instead of this intermediate state of unconsciousness being very brief or obliterated, it may be extraordinarily prolonged. Usually we know that it will be two or three hours up to a day or two. A few days ago I had an opportunity to see a decidedly exceptional case of a man in the other direction. A man was thrown off a street railway car directly in front of the Pennsylvania Hospital and received an injury on the left side of the temple. He was taken into the hospital, scarcely unconscious, stunned only. After two or three days there were, it seems, no symptoms which called attention to the fact of the necessity of his staying in the hospital. Six weeks afterwards the man became gradually duller and duller and finally became unconscious. Later when I trephined him on the left side over the anterior branch of the middle meningeal, I found a vast clot extending from the frontal region over to the occipital, where I made, as suggested by Weir, another opening through the posterior portion of the brain and passed drainage through. It was as large a clot as in the first place and I had in that case the happiness of seeing this man recover, although with a somewhat injured condition of his brain. He is slightly aphasic, still in a serious condition and will be all the rest of his life. The two cases illustrate the two extremes of hemorrhage which are so important for us to recognize and for which I think Dr. Fairchild has eminently recommended the proper treatment.

DR. ANGUS MCLEAN, Detroit—Dr. McCosh recommended that after laminectomy the patient go without support. I have tried it and find that patients get along as well without the support as with it. I have found much trouble in keeping on a support or spinal brace and think that the heavy muscular tissue there falls back in apposition and protects the posterior portion of the spine quite well.

As to Dr. Eve's paper on spina bifida, I think it is a good step to attempt the closure of the operation without aspirating or injecting fluid, but I think that it would be applicable to just such cases as he had with a small pedicle. I think the judgment of the operator would have to be called into consideration.

The last paper on injuries of the head is an interesting one. Those who fall from a distance or are thrown from a train as compared with those who have had something fall on them, or received a blow upon the head, are injured quite differently. A person receives a direct blow on his head; the force is spent over the vertex. It injures the soft tissue and may fracture and depress a limited portion of the skull. In a case like that, the endocranial contents—the brain tissue—is not disturbed much; the disturbance is more local. A person who falls from a building and strikes his head on the ground produces a general commotion of the cerebrum; the skull is elastic and impressionable; that has been demonstrated by many. The skull can be compressed laterally in a comparatively young person or in a person in middle life from one-quarter to one-half inch. You can put a clamp on the skull and compress it. The lateral walls come together and the tissue within must change; there must be a movement there of the brain tissue. A fall, striking on the head, will lessen the skull's diameter: there is a general commotion and the whole brain tissue is disturbed. An injury like that, without a fracture, is more dangerous than when you have a circumscribed, depressed fracture. You do not know how many small traumata you have there, nor the results. You may have disturbance of the ventricles or an injury to the roots of the cranial nerves or some such thing. Fractures of that kind, from a fall, are usually linear and frequently cross the base. If you take a skull and press it laterally over its opposite sides the fracture will not take place over the points of pressure, but across the base of the cranium, usually in the anterior portion or the portion anterior to the foramen magnum. That portion has a number of cavities and fissures; it is really the weak portion of the cranium.

Dr. Keen went over the different hemorrhages quite well: extradural, subdural and intracranial hemorrhage. In speaking of concussion or compression it is hard to say where concussion ends and compression begins. A slightly depressed fracture may produce compression that will afterwards disappear. Now, you first may have a compression there and, in time, the symptoms of that compression will disappear. In that case some cerebral fluid will escape from the cranium into the spinal canal and lessen the cranial tension. The spinal canal is not a bony canal, but made up partly of fibrous tissue. Where the whole brain enters into the commotion, it is much more serious that a slight tap on the vertex. You can have a much more dangerous lesion without fracture than you can have with a localized, circumscribed fracture and I think those patients deserve to be watched very closely for symptoms which may not show themselves in the first twenty-four hours, but may at the end of the first week; and they should be kept well under observation. I wish to say that in those injuries to the head produced by a fall, where there is much commotion the injury to the brain is to be considered the serious part, and not the injury to the skull.

DR. CHARLES H. FRAZIER, Philadelphia—I should like to bring to the attention of the Section an operation that I would advocate for the relief of tic douloureux, or trifacial neuralgia, a modification of those operations previously recommended, in that it depends for its success upon the division of the sensory root of the ganglion and not on the removal of the ganglion itself. Every surgeon is aware of the difficulties besetting this operation and of the frequency with which operators have been unsuccessful in attempting to remove the ganglion *in toto*. Most all recognize hemorrhage as the greatest bugbear and accountable for the majority of failures and for not a few fatal issues. The most troublesome hemorrhage met with in this operation begins at the time the surgeon attempts to remove the ganglion from its bed and the most alarming hemorrhage may occur at that time as the cavernous sinus may be injured. Any modification of the present operative procedure which relieves the operator of the embarrassment, annoyance and anxiety of hemorrhage is deserving, it seems to me, of some consideration. Granting, for the time being, that the division of the sensory root will, *per se*, effect a radical cure of trifacial neuralgia, the advantages of this over other procedures are evident to all. Chief among them are the following: 1. Generally speaking, its execution is comparatively simple. 2. It reduces to a minimum the most annoying feature of the operation, namely, hemorrhage. 3. The operation is practically complete when the posterior aspect of the ganglion is exposed, a time after which in other operations one begins to encounter the greatest difficulties. 4. The integrity of the cavernous sinus is never in danger. 5. The risk of injuring the sixth nerve is avoided. 6. Lastly, the mortality should be reduced, chiefly because less traumatism is inflicted upon the tissues, less time is required and less blood will be lost. All these conditions should lessen the tendency of shock.

The operation itself resembles those which approach the ganglion through the temporal route, and is conducted as follows: 1. The ganglion is approached by the temporal route, a horse-shoe flap of skin and subcutaneous tissue being reflected with its base line one-half inch below and parallel to the zygoma. 2. Resection of the zygoma. In carrying out the operation upon dogs, in which the field of operation is, comparatively speaking, small, we find it absolutely necessary to remove the zygoma in order to be able to reach the ganglion, and in our work upon the cadaver we find this step in the operation very materially facilitates the approach to the ganglion. 3. Reflection of horse-shoe flap. 4. Removal of button of bone with trephine from an area corresponding to the center of the field exposed. 5. Enlarging opening with rongeur forceps. 6. Exposure of the ganglion by reflection of a flap composed of dura mater and dura propria. 7. Picking up and division of sensory root upon a blunt hook.

We have taken for granted that the effect of division of the sensory root will be permanent. This statement is based upon the assumption that physiological repair of the nerve will not take place at the point of division. To prove this, I began some fifteen months ago, with Dr. Spiller, a series of experiments upon dogs upon which was practiced the operation as above described. After the lapse of varying periods of time, the animals were killed and the specimens removed for histologic examination. Dr. Spiller now has in his possession a number of such specimens and while not yet prepared to make his final report, he has not as yet seen any evidence of regeneration of nerve fibers. Leaving for the time out of consideration what weight the results of these experiments might carry, and drawing an analogy from what we know is the case in the spinal cord, it is reasonable to assume that with the sensory root of the ganglion physiologic repair is more than improbable.

DR. ROBERT F. WEIR, New York City—There are two things upon which I would like to say a few words. In connection with these brain operations there is one point I consider of great moment about which we should all come to some conclusion, and at which we have not yet arrived. It is easy enough to come to a conclusion with a compound depressed fracture of the skull without symptoms; still more so with symptoms. We think those cases with depression should be operated on. Our distinguished friend, Dr. Agnew, of Philadelphia, went so far as to say that every fracture of the skull had better be operated on. I am not sure but that he is right. My efforts are directed just to that class of fractures where we have a little wound of the scalp and on exposing it, looking at it, and sticking your finger in and feeling it, you find a crack in the bone. You expose it and find a fissure. No symptoms. What are you going to do? Leave it? A little depends as to how the injury was received. If from concentrated violence, you know you had better open that skull, because from such violence the very brittle anterior table is apt to break and you may have danger there far exceeding that on the surface. In many of these cases, you can not learn how the injury was received, or it may have been received by a simple fall on the floor. What should you do then? For many years I did nothing but let it alone; I have lately changed my mind. I have seen many patients who have had subsequent trouble. I have seen many having trouble when I opened the skull, and found there was from this slight fissure the very danger I expected. As an objection to doing this operation or of going through the skull to see what is the condition of the vitreous table, it has been urged that the trauma that you make coming down to the dura will cause adhesions greater than the original injury produced. You know how surgeons have struggled to obviate such adhesions. You must accept the adhesions. Of late years I have felt easier in my mind in going down into these slightly fissured skulls, seeing what the trouble was. I have felt safer and many times my tentative efforts have been rewarded.

The second point is in regard to gaps in the skull, in any of the operations for trephining for depressed fractures of the skull, and particularly if the gaps are of considerable size, and more particularly if the opening in the skull is in a portion of the cranium where it is likely to be exposed to injury; in other words, if it is below the line of the hat or in front where it would be visible. For these reasons I would suggest and advocate the use of celluloid plates either at the time of operation or at a secondary operation. I have resorted to these some eight or ten times and saw one patient only a few days ago who had been wearing a celluloid plate for over six years. So I speak of what I know from personal experience in connection with this device which was suggested by Fraenkel of Vienna. In four operations that I have had, I have done it according to the older method and I see no reason for changing.

What do we gain by this small incision, such as Cushing has spoken of? We have the small operative field; we merely avoid damaging the middle meningeal artery, as it passes across the dura. I do not see the advantage of these small operations. Nay, I say disadvantage. I have done Celsus' operation for division of the nerve at the foramen ovale and the foramen rotundum, which requires division of the zygoma, and I have found after splitting of the zygoma and replacement, we do not always maintain it in place, and it is attended with a considerable difficulty in opening the mouth. So that with the experience I have had in the older operation, I do not feel like abandoning it for one which brings in a risk in another direction.

DR. JACOB FRANK, Chicago—I do not wish to take up the time of the Section in going over the subject spoken of, but I merely wish to speak on a class of cases that Dr. Fairchild considered and upon which at the present time I am making experiments; in the cases that come into the hospitals where nothing can be found, the patients are unconscious, with Cheyne-Stokes respiration, slow pulse, dilated pupils, and we are at a loss what to do. In 1890, at the time that Dr. Keen was tapping the lateral ventricles, I made a tapping of the lateral ventricle for just such a patient, with the delight of seeing the pulse become more rapid, the pupils contracted, respiration normal and recovery follow. Since that time I have had one more case. I was removed from the hospital that furnished me considerable material, and I have not had an opportunity to get any more cases.

I do not agree with Dr. McLean that if the patient is hit on the head it draws the fluid into the spinal column. This was first brought out by a French experimenter a few years ago, when experiments were made with concussion of the brain. Some would say if a blow was received on the head the fluid would proceed to flow. I do not believe it. My theory is this: It is not necessary to receive a blow on the head to become unconscious or to give us symptoms of the concussion. The concussion can just as well be on the spinal column. That is my belief and I hope to prove that at a future date. That is all. (After a pause.)

Since I have tapped the ventricle for these cases, it occurred to me it would not be necessary to do so. I have produced concussions in dogs and led the fluid off by the spinal column just the same as giving injections into the cord. I hope that some of the members who are connected with hospitals where these cases come in, will tap the spinal canal, and I hope to hear reports of the same.

DR. W. H. EARLES, Milwaukee—Owing to the limited time and lateness of the hour, I desire more particularly to address my remarks to Dr. Fairchild's paper. I think the time is here—the indications from the discussions and papers support me in this—when surgical treatment for injuries of the skull must receive greater attention. I am pleased with Dr. Fairchild's paper and wish he was a little more emphatic in his radicalism. I believe any injury to the head that produces a fracture of the skull is also forcible enough to produce injury to the brain tissue itself. If this be true, then it stands to reason that the surgical treatment of fracture necessarily implies that we should, at least, go down to the brain substance or dura mater and ascertain how much injury exists. In other words, on the presumption that there is a possibility of brain tissue being injured, the skull should be trephined and the parts beneath it examined before closing it up. There is no other place in the human body where a surgeon will cover up diseased or injured parts without knowing what condition they are in, except in injuries to the skull. We all know that in injuries where we have cerebral hemorrhages there will sooner or later be symptoms which, in a measure, will direct us to a possible diagnosis, as to the conditions within; but we also know in a great majority of cases the general symptoms give us but very inadequate ideas of the possible injury of the brain substance itself. Therefore, on this point, I desire to be emphatic and I believe it as firmly as I do anything, that where we have a fracture, as a result of traumatism of the head, the plain duty of the surgeon is to ascertain the condition of the brain before closing up the wound.

We occasionally have injury of the head where there is not even a scalp wound and where the patient will die in three or four hours from internal hemorrhage. If this be true, it ought to admonish us that we ought to be extremely careful. Depressed fragments, we all admit, should be elevated, and Keen says that fractures of the internal plate can only be suspected. Now, if you have an injury to the skull sufficient to produce cerebral hemorrhage, where we are inclined to suspect a fracture of the internal plate, it would be poor surgery to cover up the external wound and dismiss the patient without making an effort to trephine and to satisfy ourselves as to the exact conditions. Having taken these steps, we will then feel as though we treated our patients in at least a surgical manner. We believe that the time has come when surgeons will treat every injury to the skull precisely as though they had trouble in the brain substance or coverings. I draw my conclusions, not alone from my own experience, but also from the experience of those who have had a greater number of cases. From an analysis of 76 cases, in my own practice, I have found injury to the brain or its coverings in 87 per cent., and for this reason, as well as for the reasons before mentioned, I believe we should be more radical in the treatment of these cases and not be satisfied with dealing with the outer surface. We should go down to the brain substance to determine the conditions there and feel that we have, at least, discharged our full duty to our patients.

DR. JAMES E. MOORE, Minneapolis—I am very glad to hear the sensible conclusions of Dr. McCosh. I have been on the fence, for while I have not killed any of my patients with fracture of the spine by operation, the after-results have not come up to my expectations. I have seen some improve, but have not been fortunate enough to secure anything like recoveries or satisfactory results. I shall direct most of my discussion to the paper on spina bifida, because I happen to have had some experience in that direction; I have been interested in the prognosis and treatment. The prognosis has much to do with our decision as to treatment. I am free to say that I agree with those who say they do not believe these cases should be treated by injections. I have concluded from my limited experience, that operation should be advised in the large majority of cases. The writer of the paper laid down the limitations of the operation very sensibly. On the whole, I should rather be inclined to be very heroic. I think we should take an advanced position and advise operation in these cases. With reference to the technic, I have had some very interesting experiences. The prognosis after operation differs very materially according to the character of the case. In those cases in which we have a small opening and in which the tumor is covered entirely by integument, the prognosis is good and the operation is almost free from danger. It simply means that you cut down to the pedicle and close up the wound. That is about all there is to it; but unfortunately the majority of our cases are large tumors. We have found from experience, and from the writer, that we can operate on very young patients. I have operated on them under four months of age, removed a tumor as large as the patient's head and, seemingly, with no bad effects from the operation. At first I was very much exercised lest I should cause serious disturbances to the nervous system from evacuating the liquid too rapidly. I was very cautious to empty the fluid slowly for fear of this trouble. In my third case, in attempting to separate the integument from the lining of the tumor, I made a free incision through it and the fluid was evacuated quickly. I had my patient in this case, as I have in all cases, lying on his face over pillows, hips well up, tilted up to an angle of 45 degrees. When I made this incision there was no change in the child's breathing. Chloroform was the anesthetic and there were no bad effects.

The greatest difficulty in the point of technic with me has been to cover the wound securely, to cover the space in the bone securely and eliminate the dead space. I have not thought it wise or good surgery to undertake an osteoplastic flap in a case of this tender age, for that is a bloody, slow operation. If I thought it was necessary to put a solid substance in this space, I would follow the suggestion of Dr. Weir and put in a solid material of another kind—celluloid—as he suggests. In my later operations I removed most of the lining of the tumor, most of the meninges, taking care to separate the nerve fibers that are on the inside of the membrane. I am not sure that those nerve fibers are of value. I question whether they have much function after they have been bunched down into the wound. I have turned those down and closed the meninges, and then I have dissected the dense soft parts loose from the denser or bony parts and then made a longitudinal incision on either side and approximated these two flaps, bringing them together with chromicized catgut or kangaroo tendon. My only fear has been where I made my longitudinal incisions and brought these flaps towards the center that I would have dead space, but I depended on the blood-clot.

Another interesting point is that we have an ugly, sloughing surface which is very alarming and I have been very successful in securing asepsis by washing that off, gently, swabbing it with pure carbolic acid and then alcohol. I have repeated this process and succeeded in getting aseptic wounds. I have not had the misfortune to have a patient die immediately after this operation. One died suddenly on the second week after operation.

DR. R. H. M. DAWBARN, New York City—About ten years ago I had the following patient: A man was struck upon the head and did not at once become unconscious, but gradually, in the course of a week, became so, with symptoms of almost

complete left hemiplegia. He was carried to the hospital with which I am connected; in the presence of the late Dr. Landon Carter Gray, I operated upon him, going down, of course, over the right motor area. The disc being removed, the dura bulged into the wound; there was no pulsation. Dr. Gray said: "Very evidently there is a clot immediately beneath." I opened the dura and the brain, covered with its pia, bulged into the wound. Still no clot. I took a slender canula and cautiously tapped in six different directions; in three of these cerebrospinal fluid escaped, evidently from the lateral ventricle, and I allowed, I think, fully an ounce to run away, because of the very severe symptoms of compression. But no clot was found, and no way of accounting for the distinct hemiplegia of the opposite side. The man lived about a week and died none the quicker for the operation, but certainly none the more slowly. I remember at the autopsy I found nothing wrong whatever upon the side where he had been trephined; but on the opposite side—that upon which he was paralyzed—was an enormous clot of blood, between the dura and the skull, as big nearly as my entire palm. If I had never heard of physiology and, as a first-year student might have done, operated upon the skull on the paralyzed side, that poor chap might now be alive. I sent the brain, together with the beginning of the spinal cord, to Dr. Gray, who carefully examined them. He found that it was one of those cases in which the motor fibers had not crossed into the medulla, but had gone down each upon its own side of the spinal cord. I discussed it at a meeting of the New York Surgical Society. Those present had known only of one case, Dr. Joseph D. Bryant's, and the latter had only heard of one additional case of the kind in his life.

I have my doubts about the extreme rarity of these things. Anatomists claim it is not so excessively unusual in examining cadavers; but in clinical surgery it is reported with extreme rarity. Perhaps the reason is that when the customary operation gives no relief and the patient dies, an autopsy is generally refused us. Hence, we can not ascertain the true cause of the failure. The family feel that an unnecessary or a useless operation has been performed—perhaps attribute the death to it—and will not permit an autopsy. Should I ever again fail to find the cause of an acute compression of the brain by trephining according to the laws of physiology, I would now remove a second disc from the skull upon the paralyzed side. This would not add much to the danger of the man and we might save a certain number of lives in this way that otherwise would be lost, as was the case just recorded.

Dr. Weir has spoken most interestingly in regard to the use of Fraenkel's method of celluloid. I have brought with me a special plate of modified celluloid, especially made at my request, containing no free nitric acid and with a large percentage of its camphor removed and a little urea substituted, which is being used now. That plate I propose to show before this Section in connection with abdominal surgery; for filling a gap in the abdominal wall, where there is a ventral hernia, where we can not bring the muscular wall together. The skin is, of course, closed over it. In the skull I have repeatedly used this plate to fill bony gaps, and with much satisfaction. In skull work celluloid plates are not new; but whether they remain for years, and indeed, permanently, and cause no irritation, or soften and yield and act as irritants, depends wholly upon that composition. Celluloid, as ordinarily made, contains some free acids still, and will not do. Synthetically made, the urea acid has for some time been employed to give the necessary spring and elasticity, partly replacing the more expensive camphor, and it seems less irritating to the living tissues than using so much camphor. The plate I show resembles closely a piece of ordinary window pane in thickness and general appearance. When boiled it cuts, while still hot, as readily as soft horn. Being transparent one can place it over the gap to be filled and see to mark upon the plate the exact shape of contour desired.

DR. A. C. BERNAYS, St. Louis—It seems to me that the paper by Dr. Fenger has opened a wide field, which heretofore is not mentioned in English literature of brain surgery. He proposes, if I understand him correctly, a systematic search for fluid located in the substance of the cerebrum and cerebellum, on both sides of the head. He proposes, I believe, a small trephine hole, to be made over the parietal prominence and through that trephine hole the introduction of a canula into the anterior and into the middle and posterior lobes of the cerebrum. Then, another hole on both sides of the head, through which a short canula can be introduced into the cerebellum, and, it strikes me, gentlemen, that this is an enormously long step in advance of anything that has been advocated in surgery of the brain, and it also strikes me as being important and a well-justified, well-founded step in the right direction. There are undoubtedly cases which the Doctor reported, in which the symptoms led to a well-founded suspicion of an abscess, in which we can not even tell which side of the brain or head is affected.

Now, I want to say one word about the technic of this operation, and there I think the Doctor should have been a little more explicit. It is not necessary to use a large trephine, but a small burr, not over three-eighths in its largest diameter, the hole in the outer plate being nearly twice as large as the one in the inner plate, so that an instrument could be obliquely introduced through that hole, forward, backward and downward, and that was the reason why I took the floor, to suggest that the hole must not be thought of as being a trephined hole in the ordinary sense, but a small hole made by an ordinary dental burr, or one of those instruments which Schwartz uses for boring a little hole into the mastoid process. Systematic search for fluid in obscure cases will, I believe, be rewarded by fine results.

DR. T. M. MAXWELL, Keokuk, Iowa—I had a case in which the whole left side of the skull was crushed. A piece of bone as large as a dollar was removed; he was completely paralyzed on the left side. After dressing the wound, the patient recovered from the paralysis.

DR. W. J. MEANS, Columbus—I will confine my remarks to some points concerning the surgical treatment of injuries and diseases of the spine. It occurs to me that the text-books on surgery are too conservative and vague in their treatment of injuries and diseases of the spinal column. The advanced views in this direction taken by Dr. McCosh I believe to be in accord with the experience of most surgeons who have given the treatment of these cases some attention. In the last few years I have had several interesting cases of injury to the spine that have fully convinced me that the so-called conservatism or "do-nothing" treatment should be relegated to the past and more active and intelligent procedures adopted. Early operations on the spine are called for in every case where there is reason to believe from the symptoms that the cord is impinged upon by displaced vertebræ or fragments of the arch. I will also go further and include cases of hemorrhage either intradural or extradural, where the clot is producing paralysis.

The question of determining the extent of the injury—therefore the necessity and propriety of an operation—is one of considerable moment to the surgeon. In abdominal surgery the question of a positive diagnosis before the operation is secondary. The abdominal cavity is opened and the diagnosis made. Sometimes the character of the disease precludes any interference. The opening is closed and the prognosis determined accordingly. A laminectomy is practically free from danger; therefore, when a diagnosis is obscure, no harm can be done by exposing the injured area and determining the true condition. If the cord has been completely severed, no help can be given; the incision is closed and the friends advised accordingly. Unfortunately we are taught that complete paralysis of the extremities and pelvic organs, both sensory and motor, following an injury, means complete destruction of the cord. This is a false premise and should be corrected.

A case of gunshot wound came under my care a few months ago, in which there was complete paralysis of the body below the waist. There was absolutely no reaction to any test applied. Under the *x*-ray the bullet was located in the 4th dorsal vertebra. The bullet had crossed the spine diagonally, lacerating the membranes of the cord and lodging between the pedicles. There was quite a large blood clot and considerable inflam-

matory exudate around the portion of cord that was injured. The bullet and the blood clot were removed. Within one week after the operation there was some reaction to stimulation in the legs. When the patient left the hospital a few weeks after the operation he had slight movements of his feet and legs, and has since regained considerable power in them. Another case, an engineer on the railroad, had his spine injured in a wreck. I saw him within two hours after the accident, and found him completely paralyzed below the lower dorsal region. There was a deformity over the 10th and 11th dorsal vertebræ. There was no reaction to irritation either sensory or motor. From the symptoms I concluded the cord was severed and thought it unnecessary to operate. The patient was put in the hospital, and the usual expectant plan of treatment carried out. After ten days there was a return of sensation in certain areas followed by limited motion. The patient gradually improved. At the end of twelve months he could walk with crutches. Evidently the cord had not been severed or crushed. I might enumerate several other cases to illustrate the position I have taken, but this will suffice to emphasize the point that it is impossible to determine definitely the amount of injury to the cord from the existing paralysis. In similar cases to the last one I should operate as early as possible.

The second point I wish to make is that where there has been an injury to the spinal column followed by paralysis, and there is good reason to believe the cord is pressed upon by dislocated vertebræ or fragments of bone, benefit may follow an operation though several months have elapsed. The third point is that laminectomy is advisable in diseases of the vertebræ where the necrosis is confined to the arches and processes.

DR. GEORGE W. CRILE, Cleveland—I do not believe there is any difference of opinion as to what to do in any case of incomplete paralysis due to pressure upon the cord. But the question as to whether or not you can accurately diagnosticate complete cross lesion of the cord confronts me. I have had two cases in which I have depended on a group of symptoms to diagnosticate total cross lesion of the cord and the autopsy showed there was cross section. At the present time I have a patient who is recovering from the immediate effects of dislocation of the cord, which I believe to be cross section, but from what Dr. McCosh has said I confess to feeling an uneasiness in this case. I have always held to the dictum that the total loss of all the reflexes, of pain, touch and temperature senses below the point of injury, the loss of vesical, rectal and vasomotor tone show total cross lesion. The question then arises, in a given case of total paralysis, below a certain point of injury, whether you can diagnose with accuracy complete cross section of the cord. That, together with the fact that such a large percentage of cases of dislocation of the cord on the immediate reception of injury to the spinal cord the vertebræ spring back again; that if you do operate you can not give any further relief in that group of cases in which the dislocation is so manifest, operation would not be indicated. But I am free to say that, until it is proven that regeneration of the human cord is possible, any diagnosis of a case of cross lesion, if that diagnosis rests on a certainty, would contraindicate operation. Fact is always greater than theory, and I personally feel that my confidence in the theory I have had is shaken.

I would like to ask Dr. McCosh if he found in this case touch, pressure, heat and pain senses abolished, and whether he found an absolute vasomotor paralysis, as well as paralysis of the deeper reflexes in the case upon whom he operated and after the operation the patient grew better?

DR. A. H. TAGERT, Chicago—I wish to report a case of fracture and dislocation of the spine—2d lower dorsal. The patient was anesthetized and extension, counter extension and manipulation used which nearly restored the continuity of the parts. I put the patient to bed with continued extension and counter extension. When the patient regained consciousness the paralysis, pain and numbness were much improved, the man made a good recovery and for ten years has been able to do hard manual labor.

I will also call your attention to one point in fractures of the skull that is sometimes overlooked. The skull is elastic, so if the violence that makes the fracture is sufficient to spring the bone enough to injure the inner plate or admit septic material, we will find some little particles of tissue or foreign substance in the line of fracture. If we examine carefully the line of fracture and find no fragments of tissue or foreign particles therein and no symptoms of injury to the brain, I would let my case go without trephining; but on the contrary, if I found particles of foreign substance in the line of fracture I would certainly trephine whether we had brain symptoms or not. In these cases, as in all others, good judgment will dictate best what to do.

DR. E. J. MCKNIGHT, Hartford, Conn.—On March 23, a man jumped from a moving trolley car and sustained a depressed fracture on the left side of the head. The bones in that vicinity were much broken up. I think there were three or four pieces. It was impossible to tell how much injury was done. The trephine was entered above and on the side; the bones put in good condition and the man made a very rapid and apparently complete recovery, and was discharged from the hospital certainly before the first of April. Later, my service having terminated April 1, he returned sometime during April with a severe headache and temperature, within the twenty-four hours going up to 105, but not regular, sometimes in the morning, sometimes in the afternoon. Dr. Howe explored the vicinity of the original injury and found everything apparently all right. Later the symptoms pointed more distinctly to the brain and a large flap was dissected off. Smaller pieces of bone were entirely removed and a grooved director passed several times into the substance of the brain. After making three or four attempts an ounce and one-half of clear serum was removed, flowing out in the channel of the director. The man made a rapid recovery from that time and was exhibited at our State Society two weeks ago apparently perfectly well. I should use in every case the grooved director. You can pass a probe in the groove as far as you wish, and it seems to me that it is better than any suction instrument.

DR. S. C. BALDWIN, Salt Lake City—My experience has taught me that even in slight injuries of the skull it is well to trephine oftener than we do. We have had some little experience in the hospital in the use of celluloid plates and we were unfortunate enough to have an opportunity to make an autopsy after using one. We found that a large part of the plate had been absorbed and it was as flabby as a piece of silk; it was simply acting as an irritant instead of a protection.

DR. J. W. VAUGHAN, St. Louis—I wish to report a case which had complete paralysis below the fifth dorsal vertebra; sensory and motor nerves, bladder and rectum were affected. The patient was operated on. There was some motion under the influence of chloroform; this particular fact was manifest when there was irritation on the right side of the cord at the point where the incision was made. There was motion on movement of the leg on the opposite side. It was five months' standing, complete paralysis, in which he would not be operated; the vasomotor system was interfered with. Five weeks ago to-day that man was operated on and that man has continued to improve slowly, but constantly. There were no two days in succession in which there was not some improvement, so at this time he has motion all along the left leg. There was motion, after operation, in the left leg; some in the right leg, and anterior to this gradually extending down over the abdomen. Sensation is returning over his abdomen, and the last time I examined him there was some sensation over the penis. He can feel some sensation when the bowels are going to operate; that occurred four days ago—and sometimes when urine is withdrawn.

DR. MCCOSH, in reply—I would like to lay stress on the importance of early operation in cases of injury to the spine. The mere exposure of the spines and laminæ by cutting through the muscles of the back is a very simple procedure and is attended with practically no risk. If the laminæ be removed the operation becomes somewhat more serious, but

still the risk is slight. As regards the treatment of suspected injury to the spine it seems to me that the same rule which we adopt in cases of suspected fracture of the skull applies also to cases of spinal injury, namely, to expose the bone and to ascertain if there be a fracture.

In answer to Dr. Crile's question concerning loss of sensation to touch, heat, and pain, I would say that there was absolute loss of all three functions. As regards the reflexes, the loss of knee-jerks was absolute and apparently of the superficial reflexes as well. As regards the vasomotor disturbances I am not positive. Formerly I have been under the same impression that the loss of tendon reflexes combined with paralysis contra-indicated operation. I have been led, however, to doubt the accuracy of these contra-indications as I have seen quite a number of cases of injury to the cord which have recovered without operation, where in the first hour or two after the injury the reflexes were almost completely abolished or at least were very hard to discover, and yet in a few hours these reflexes gradually returned, and in one or two days became normal. In the case referred to by Dr. Crile the operation was performed very soon after the injury, and it is possible had it been delayed for say eight or ten hours the reflexes might have returned. They were certainly abolished apparently for several hours, and yet one can not argue but that at a later period they would not have returned.

DIABETES MELLITUS IN CHILDHOOD;

WITH REPORT OF A CASE.*

A. C. COTTON, M.D.
CHICAGO.

The following is the history of a case which was first presented at my clinic Feb. 1, 1901:

Ruth M., aged 6 years, 3 months. Family history negative as far as diabetes, gout, tuberculosis and syphilis are concerned. Weight at birth 7 pounds. Was a healthy, plump infant.

Previous illnesses: Summer complaint at 10 months; whooping cough at 2 years, with protracted convalescence, since which time she has had occasional attacks of croup. At 5 years, chicken-pox. At 5½ years measles, from which time—April, 1900—she began to show nervousness, irritability, variable appetite, disturbed sleep and progressive emaciation. In August, it was noticed that she drank enormous quantities of fluids, to which fact her mother attributed the polyuria.

She entered school the middle of September, but was taken out after a few days on account of nervousness and frequent micturition. A physician was called and the child was treated for "nervousness and weakness," without improvement.

Status praesens: (Feb. 1, 1901.) On presentation to the clinic, the patient appeared undersized; weight 32 pounds; weak, anemic, with dry skin, harsh hair and carious teeth. Tongue red and clean, although there has been habitual constipation. Lungs and heart negative. No enlargement of liver or spleen. Very restless and easily fatigued. Extremely sensitive to cold. Pupils normal and no disturbance of vision. Patellar reflex absent. Blood examination showed 3,580,000 reds, 12,000 white cells and hemoglobin 85 per cent., notwithstanding pallor of the skin. Examination of 24 hours' specimen of urine; amount 84 ozs.; reaction acid; specific gravity 1028; thick cloud of albumin, sugar present, one drop giving marked reaction to Haine's test; no casts.

She was put on diabetic diet and pancreatic extract, with sodium salts for relief of constipation. A daily observation was made of the urine, the result of which is appended in the following table.

During the following 5 weeks the quantity of urine passed daily varied from 40 to 104 ounces; the difference in specific gravity, obtained by fermentation test, ranged from 13 to 32, the sugar from 1 1-12 to 6 3-12 oz. or from 2.99 to 7.36 per cent.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

Although a grave prognosis was given, the parents were much encouraged by her temporary improvement in strength and weight. The regulation of her diet was but imperfectly observed, owing to parental indulgence, and at times the fluctuations in the urinary findings were coincident with lapses from dietary regimen.

On March 11, she contracted a cold from exposure and developed symptoms which a neighboring physician, summoned hastily, pronounced croup. I saw her the following day and found her with a subnormal temperature, rapid pulse and exaggerated breathing, with crowing inspiration, without cyanosis. There was slight delirium and restlessness, with intervals of partial coma, but no suppression of urine. The next day the crowing inspiration ceased, although the dyspnea became exaggerated. She developed the characteristic "dyspneic coma" in which she died March 14, 1901. No autopsy was allowed.

Date urine was passed.	Amount of urine in 24 hrs. Fl. oz.	Sp. Gr. before fermentation.	Sp. Gr. after fermentation.	Difference in Sp. Gr.	Amount of glucose in twenty-four hours.	
					Grains.	Fl. oz.
Feb. 3.	40	1028	1015	13	520	1 1/12
" 5.	40	1031	1010	21	840	1 3/4
" 6.	48	1031	1014	17	816	1 7/10
" 7.	64	1032	008	24	1536	3 1/5
" 8.	48	1031	1009	22	1056	2 2/10
" 9.	48	1032	1010	22	1056	2 2/10
" 10.	80	1033	1003	30	2400	5
" 11.	48	1027	1010	17	816	1 7/10
" 12.	72	1031	1006	25	1800	3 3/4
" 13.	64	1035	1009	26	1664	3 7/15
" 15.	48	1032	1006	26	1248	2 3/5
" 16.	48	1030	1005	25	1200	2 1/2
" 17.	56	1036	1010	26	1456	3 29/120
" 18.	40	1034	1011	23	920	1 11/12
" 19.	72	1031	1002	29	2088	4 7/20
" 20	72	1035	1003	32	2304	4 4/5
" 23.	80	1034	1002	32	2560	5 1/3
" 24.	104	1031	1002	29	3016	6 17/60
" 25.	96	1030	1014	16	1536	3 1/5
" 26.	64	1031	1010	21	1344	2 4/5
" 27.	88	1041	1011	20	1760	3 2/3
" 28.	80	1035	1015	20	1600	3 1/3
March 1	64	1035	1015	20	1280	2 2/3
" 2	80	1010	1010	.	.	.
" 3	56	1034	1016	18	1008	2 1/10
" 4	64	1032	1012	20	1280	2 2/3
" 5	64	1033	1015	18	1152	2 43/120
" 6	56	1033	1015	18	1008	2 1/10
" 7	56	1028	1014	14	784	1 19/30
" 8	88	1031	1012	19	1672	3 29/60
" 9	72	1032	1013	19	1368	2 51/60
" 10	64	1036	1011	25	1600	3 1/3
" 11	72	1031	1014	17	1224	2 11/20

How many physicians make the examination of the urine a part of the routine practice in the diagnosis of the disorders of childhood? The fact that analysis of urine is now recognized by the mass of the profession as an essential procedure in the examination of adults may help to explain the recent increase in the total number of diabetic patients reported. If this be true, it may not be unreasonable to urge that the well-known neglect to examine the urine of little patients may partially account for the seeming rarity of this disorder in young children.

The fatality of diabetes during the first decade of life should give to records of vital statistics significant value in estimating the prevalence of this disease in the very young. The essential objection to this method of determining its relative frequency lies in the fact above referred to., viz., the want of accuracy on the part of the attending physician in assigning the cause of death in his report to the registrar.

Most of our standard text-books agree in the statement that diabetes mellitus is rarely found in the extremes of life, but give no comparative figures.

Since vital statistics, as kept by our city health departments, seem to furnish the only information on this subject, the writer begs leave to quote from Dr. H. Stern's "Comments on the Official Records of Mortality from Diabetes Mellitus from the New York Health Department," and also from statistics from the Health

Department of Chicago, furnished through the courtesy of Assistant Commissioner, Dr. Reilly.

MORTALITY STATISTICS WITH REFERENCE TO DIABETES MELLITUS IN CHILDHOOD.

NEW YORK FOR 11 YEARS, 1889-1899.

Total number of deaths from diabetes mellitus	1867
Average per annum	168+
Deaths under 1 year	4
Average per annum	16/44
Deaths under 10 years	24
Average per annum	2 8/44

AGE.	DEATHS.	PERCENTAGE.
Under 1 year	4	0.21+
Under 10 years	24	1.28

CHICAGO FOR 4 YEARS, 1897-1900.

Total number of deaths from diabetes mellitus	418
Average per annum	104½
Deaths under 1 year	3
Average per annum	33/44
Deaths under 10 years	15
Average per annum	3 33/44

AGE.	DEATHS.	PERCENTAGE.
Under 1 year	3	0.71+
Under 10 years	15	3.58

Total deaths from all causes	95,046
Total deaths from all causes under 10 years	37,498
Average deaths from diabetes mellitus (all ages) to total deaths	0.44 per cent.
Average deaths from diabetes mellitus under 10 years from diabetes mellitus	3.58 per cent.
Average deaths from diabetes mellitus in children under 10 years, to total deaths from all causes under 10 years	0.04 per cent.

ETIOLOGY.

Heredity.—That heredity plays a rôle in the predisposition to diabetes there seems to be little doubt, since its history or that of allied disorders, such as gout, tuberculosis and other diathetic disorders in the immediate or remote ancestry is found too frequently to be passed by as a mere coincidence. Thus, Frerichs notes hereditary influence in 10 per cent. of his cases. Seeger in 14 per cent., Bouchard in 25 per cent., as quoted by Von Noorden. Schmitz gives an analysis of 600 cases of diabetes in which 248 were hereditary. The late Dr. Purdy found heredity in 30 per cent. of his cases and states that he has seen diabetes appear in four generations. The same authority quotes Sir William Roberts, who speaks of a family of eight children, every one of whom became diabetic. Pavy mentions a family of seven, four of whom were diabetic. It is even claimed by some that diabetes may be congenital. In support of this, Ballantyne cites a case—reported by W. B. Bell—of glycosuria in an infant of 3 months with diabetic history. Ludwig, also, in 1895, refers to a case of a diabetic mother with saccharin hydramnion surrounding a dead fetus.

Somewhat closely allied to this form may be considered cases of congenital syphilis, in which diabetes may occur as an early complication. Such a case is reported by Lemonnier, in which the diabetes yielded after four months of anti-syphilitic treatment.

The term diabetes mellitus, like that of rheumatism, is employed to designate, not a single constant pathologic process, but probably a variety of deviations from the normal, in metabolism or in organic function. On this account it has been suggested that the name should be exchanged for one more expressive of the pathogenesis. In each instance the particular substitute would depend upon the favorite pathogenic theory of its advocate, whatever that might be, whether alimentary, hepatogenic, pancreatic, neurogenic, bacteriologic, toxic, or plasmolytic. Even though a number of widely differing, separate disorders may be found to have been included clinically under one term, as was formerly the case in "Bright's disease," it still remains that diabetes mellitus expresses the common, most prominent, most pronounced and demonstrated clinical feature of this protean disorder.

Infectious Diseases.—It seems to the writer that the inclination of many to attribute to the infectious diseases of childhood a causal relation to diabetes is not based upon careful analysis of the evidence. Von Noorden, Herrick and others state that an attack of an infectious disease is frequently accompanied by a disappearance of sugar from the urine of diabetics. The same phenomenon has been observed during an attack of jaundice in a child, and Terrien seems to prove in his experiments that the existence of acute gastro-enteritis in no way diminishes the glycolytic function. Hence it is argued that a pre-existing glycosuria, discovered through the closer observation during retarded convalescence, may be wrongly attributed to the acute infectious diseases.

Transient Glycosuria.—Many observers admit that any one of the exciting causes may act to produce a transient glycosuria and that the patient, recovering from the disturbance, may subsequently, even after a period of years, develop a serious diabetes.

Dr. Eugene Terrien, referred to above, has found, by injections of sterilized sugar solution into the circulation, that the glycogen storage capacity of the tissues is relatively high in infants. From this it might be inferred that transient glycosuria, at least as far as it is dependent on over-ingestion of carbohydrates, would be of less frequent occurrence in infants than in adults.

SYMPTOMS.

Since the obese type of diabetes is practically unknown in early childhood, an advanced case presents, briefly, a picture of extreme inanition, emaciation, muscular weakness, dry skin and hair, brittle nails, extreme irritability and sensitiveness to cold. The especial symptoms, polyphagia, polydipsia and polyuria are always present.

According to Comby, furunculosis and other skin lesions, common features in adult diabetes, rarely appear in children. This same authority attributes the rareness of the complicating albuminuria to the integrity of the kidneys and greater suppleness of the vascular system in early life. However, in the case cited above, albumin was almost constant while under my observation.

Of the nervous and ocular symptoms frequently associated with diabetes, such as symmetrical neuralgia, neuritis, motor, sensory, trophic or psychic disturbances, amblyopia, cataract, iritis or retinitis, none were observed in the patient whose history is given, with the exception of the diminished knee-jerk and occasional transient pain in the legs and epigastrium.

The disease in childhood is essentially acute. Reports of cases that survive more than a few months are rare.

TREATMENT.

So long as the etiology, and even the pathology, is involved in the obscurity which obtains at present no routine treatment applicable to even the majority of cases may be formulated. Of the many drugs and remedial agents that have found advocates, such as

opium, bromids, antipyrin, sodium salicylate, alkalies, etc., few, if any, have met with the approbation of more than a very limited number of clinicians. With perhaps the exception of opium, which seems to retard the progress of the disease, and alkalies to counteract the "acidosis" and impending coma, the benefits of drug therapy are admittedly restricted to rare, exceptional cases. Against the high rate of mortality from this disorder in childhood, the limited utility of opium affords but a modicum of encouragement as to help from medicaments. The prolongation of a life, with the establishment of the opium habit at its threshold, is not sufficient compensation.

At the present time the regulation of diet seems to be the most important therapeutic measure and by far the greater number of important improvements have been attributed to diet.

That the severe form is the one most frequently seen in early childhood is acknowledged, and the rapid course of the disease, rarely influenced by therapy, is the experience of all. The death certificate follows hard upon the diagnosis. If from this gloomy outlook concerning the prognosis in early childhood there be one ray of light it seems to the writer that, for the present at least, it must be sought along the lines of prophylaxis.

It is now believed that diabetes, if not an hereditary disease, at least develops along the lines of a somewhat positive diathesis. To the extent that the function of the family physician is supervisory over his patients, may he hope to avert such disorders by controlling their development through attention to hygiene, in order that the young, whose immediate or remote ancestry show diabetes, gout, tuberculosis, neuroses, or even syphilis, should be sedulously guarded. Dietary errors, such as ingestion of food beyond the child's capacity for absorption and assimilation, preponderance of saccharin substances, as sweetmeats, confections and pastries, must be carefully avoided.

That the elimination in these little patients is of the utmost importance receives additional significance when we consider that some observations emphasize autoinfection and reinfection as an etiologic factor. It is of interest in this connection to mention that injection of feces as well as the urine of diabetic patients in lower animals will reproduce glycosuria. A thorough care of the digestive tract, including the teeth, is all important. So, too, the care of the skin and respiratory organs, that elimination by the former and oxygenation through the latter may attain the highest possible perfection. Adenoids should receive attention, as well as other evidences of lymphadenitis and struma.

Especially should we protect these children from mental strain, shocks, frights, trauma and exposure to inclement weather, since cases are reported in which the development of glycosuria was preceded by such disturbance.

In a child thus carefully observed, diabetes may be anticipated by the appearance of pre-glycosuric signs, such as incontinence of urine, muscular debility, irritability, with progressive emaciation in spite of voracious appetite, even though a single test of the urine fail to reveal sugar. The importance of an early diagnosis is evident, for it is admitted that success in treatment bears an inverse ratio to the previous continuance of the disease.

The utmost care of the diet and hygiene is even more important in children than in adults, since a higher ratio of metabolism is essential to growth in addition to repair. But the child will not bear radical dietary changes well. Hence, though so important, the reduction of carbohydrates should be gradual. The same may be said of the augmentation of fats, when indicated. Finally, too much stress can not be laid upon the importance of protecting the child from a sudden lowering of the temperature.

DISCUSSION.

DR. C. F. WAHRER, Fort Madison, Iowa—When a school teacher, I had a peculiar pupil. He was a genius in spelling, but that was about all. He was finally apprenticed to a blacksmith. One day the boss sent him out to measure a wagon body, and the boy reported that its length was "8 feet 16 inches, and the length of the hammer handle, and so much," indicating a position on the hammer handle. This is about our position in regard to our knowledge of diabetes. I wish to speak in regard to a too emphatic treatment and dietary. Those who need the most enlightenment on this subject are, however, not the ones who come to these meetings, but those who stay at home and neglect even such simple measures as making analyses of urine. When young students in medicine we think we know something about diabetes. We have a few medicines which control the output of sugar in the urine, and perhaps also reduce the polyuria to some extent, but still we are unable to get at the root of things. Nearly all of these cases of diabetes mellitus die. I believe there are very few cases on record in which children under 10 years of age, suffering from true diabetes mellitus, recover. Why, then, take away from them the few things which they can eat and enjoy, and insist upon their eating things which it requires a strong stomach to digest. I do not condemn dietetic treatment by any means, but I object to the adoption of a routine treatment which may be more disastrous than the disease itself. Let us show mercy, and think carefully before we do things which are tyrannical or even cruel. I have a child who had scarlatina in connection with three of his brothers and sisters. The first child attacked was extremely ill, but the child I am thinking of was only moderately sick. All of these children made a very fair, and I may say, an uneventful recovery. This child was a boy who, with the exception of a tendency to obesity, was healthy in appearance. In the early part of August it was noticed that he often arose at night to go to the water closet. For a few weeks I paid no attention to this report, but then an analysis of the urine showed over 5 per cent. of sugar. I corresponded with many medical men, but received no more light than we have to-day. The case terminated fatally without any severe manifestations of the disease aside from those referable to the urine. Two weeks before death the boy enjoyed greatly a hunting trip, but he suddenly became very ill after it, and died after three days of diabetic coma.

Why diet and treat so radically that which we do not understand? Many who take no treatment whatever live just as long as others do. I do not want to disparage conservative treatment.

DR. COTTON, in reply—Of course, there is much that might be said on this subject, for no doubt we have all had interesting individual experiences. I must say that I consider myself somewhat of a failure in the effort to arrest diabetes in children. The dietetic theories which have been advanced are quite confusing, but I am convinced of the importance of watching diabetic children.

The authorities quoted in the paper seem to me to show very clearly their belief in hereditary tendencies. Thus Purdy asserts that he is satisfied that he has found a hereditary element in fully 30 per cent. of cases. If the true function of the family physician ever comes to be fully realized, and he becomes medical supervisor of the family, he must take into consideration everything which shows a predisposition to diabetes. In this way it is not improbable that he may prove of great value in stopping diabetes before it has become thoroughly established.

There are pre-glycosuric indications which should not be disregarded. Then there are attacks of transient glycosuria which should always be regarded with suspicion, for there are cases on record in which diabetes mellitus has developed even months and years after the appearance of a transient glycosuria. Until the lay mind is educated to the point of appreciating the true relation of the physician to the family, namely, that of conservator and supervisor, we shall not be able to make ourselves very useful in such disorders as diabetes mellitus in young children.

ALBUMINURIA IN DISEASE OF THE KIDNEY IN INFANCY AND CHILDHOOD.*

JOHN R. RATHMELL, M.D.

Professor Obstetrics and Diseases of Children, Chattanooga Medical College: Member Staff Erlanger Hospital.

CHATTANOOGA, TENN.

Diseases of the kidney in infancy and childhood are not so varied as in adults. They are chiefly active hyperemia and nephritis following the contagious diseases, especially scarlet fever. The acquired diseases of the kidney in childhood show considerable difference from adults, because acute affections, common to childhood, causing diseases of this organ, are seldom met with in after life. Under 15 years of age there is less likelihood to disorders of circulation than in later periods, and consequently under this age they are less likely to have chronic lesions of the kidneys.

Again, a child's kidney rapidly recovers from an injury. It is very rare to find a case of pyelonephritis, or hydronephrosis in children. But cachectic conditions lead to amyloid infiltration and this, in turn, to chronic albuminuria in children as well as in adults. Physiological albuminuria may occur at any period of infancy or childhood, but it is the most common between the ages of 5 and 15. The albumin is rarely present in the urine passed in the morning immediately on rising. Albumin alone being present, with an absence of blood corpuscles or other abnormal elements, indicates an absence of pathological changes.

While albumin in the urine does not, of necessity, indicate serious organic disturbances in the kidney, neither does it necessarily render the prognosis of a grave character, yet its presence, however slight, commands the utmost watchfulness and care before a decision is reached as to its being of no clinical significance. Albuminuria is the escape of serum-albumin and serum-globulin from the blood vessels into the renal tubes, and this escape of albumin indicates slight or grave nutritional disturbances. One is scarcely able, however, to certainly locate the site of these disturbances. For in each kidney it is estimated that there are about fifteen miles of tubing. This tubing is lined with basement membrane covered by epithelial cells of a variety of shapes and sizes. It is probable that the very shapes and sizes of the cells are accounted for, not by any peculiar function they each possess, but by the fact that they fill in the lumen of a tube that takes on the form, in quirk and curl, of almost every geometrical figure, from the capsule of Bowman to the excretory duct of Bellini. Yet it is thought that the columnar cells of the tubes of Henle select the urea, though this has not yet been certainly proved. While the tests for albumin and the use of the microscope will show disturbances, somewhere along the tubal track, yet nothing will appear that absolutely locates the lesion.

CAUSES OF ACUTE AND CHRONIC NEPHRITIS.

The scheme given here has been of much use to myself in locating the first appearance of the trouble and in giving the causes. It seems to me that it covers the whole field, as follows: The nutritional disturbances lie in the epithelium lining of the glomeruli, the tufts of capillaries, and the uriniferous tubules.

1. Renal Congestion.—Active: chronic liver, heart, pregnancy; passive: tumors.

2. Definite Lesions of Kidney.—Toxemia, scarlet fever, gout, amyloid and fatty degeneration, renal suppuration, renal tumors.

3. Indefinite Causes.—Scurvy, syphilis, medicinal poisoning, kidney, pregnancy of, epilepsy, tetanus, injuries to head, apoplexy, exophthalmic goiter.

4. Accidentals.—Pus: cystitis, pyelitis, urethritis; blood: pelvis, ureters, bladder.

5. Febrile.—Typhoid fever, smallpox, yellow fever, diphtheria, scarlet fever.

6. No Definite Lesions.—Functional, dietetic, intermittent, cyclic.

Albumin is found in the urine after a rich meal, heavy muscular exertion, intense emotion, or cold bathing. The cyclic variety bears upon life insurance. However, when every other constituent of the urine is normal, the case under careful management ordinarily recovers and the life insurance people sometimes accept the risk. I care not how little stress may be laid on the so-called functional albuminuria, the cyclic variety, or what not, undoubtedly some changes, though apparently trifling, do take place in the kidney somewhere. Fortunately, however, for the patient, these changes are non-progressive. But sooner or later, it may be after months or years have passed, grave lesions will show themselves, and insidious degeneration has been going on in the meantime. So for no other reason than that a certain relief may come to the mind of the physician, it becomes a necessity for him to determine, by differential diagnosis, whether he is dealing with a case of renal albuminuria or functional albuminuria.

I desire to report the case of a child, where the cause of the disease is somewhat uncertain. Early in March, I was called in consultation to see a little boy 4 years old, who in development would ordinarily be taken to be 7. He had a very large head, large body and large limbs. At the age of 12 months, I was told, he weighed forty pounds. The history of the boy is that he was never sick until the beginning of this illness. He never had the diseases common to children, such as scarlet fever, measles, whooping cough, etc. The preceding Christmas time, he seemed to be indisposed and it was observed that his eyes and face and lower extremities were edematous. A physician was called and treated him for a few days, when the child apparently recovered. Two or three weeks later he became sick again, with the same symptoms. An examination of the urine showed the presence of a large quantity of albumin.

When I saw the patient, the albumin was about two-thirds of the bulk of the urine. The specific gravity was 1040, the color dark, and the amount plentiful. The temperature was normal, eyes almost closed from the swelling, the face also very much enlarged, and the feet, ankles and lower extremities very edematous. The abdominal cavity was ascitic, the hands and arms were swollen, while the pulse was fair but showed consider-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: H. L. Tuley, Edwin Rosenthal and Samuel W. Kelley.

able arterial tension. There was considerable loss of strength, and a great loss of red blood. In fact there was present the condition known as the "alabaster cachexia."

The diet in this case was nothing but sweet milk as long as he could take it, but after awhile his repugnance to milk became so great that he could scarcely swallow it. Then some stale bread was put in the milk, and he was also allowed some fruits in the form of oranges and lemonade. In some types of albuminuria, white meats may be given, namely, fish, chicken, turkey, sweetbread, birds, etc. In the way of vegetables, spinach, oyster plant, parsnips, etc., may be allowed. In the way of fruits, stewed apples, prunes, pears and peaches are sometimes used. But milk, two or three pints daily, is the food *par excellence*.

By way of treatment in this case, the wet pack, epsom salts and cream of tartar, a solution of the citrate of magnesia and vichy water, also a solution of the lactate of strontium, and Basham's mixture were used. The albumin ran from 1 to 2 per cent. In ordinary cases it runs from only 0.16 to 0.5 per cent. The specific gravity continued at 1040. The scrotum and penis were edematous to a very great degree. The eyes remained puffed and the arterial tension high. From time to time the urine was examined microscopically and pus, blood, and a few epithelial and hyaline casts were found. The history and progress of the case pointed to a chronic parenchymatous nephritis, immediately following an acute nephritis, a condition rarely found in children. This child died about ten days thereafter, from uremia and pulmonary edema.

Another case in point is that of a little boy 5 years old. His home was in Lookout valley. He had whooping cough the winter previous to my seeing him in July. The disease left him with albumin in the urine, in large quantities. I was called as consultant in July and found him in the home of his brother, a physician on Lookout Mountain, about 20 miles from Chattanooga. He had been carried thither by his parents, who hoped that the change, from the valley to the top of the mountain, would improve his condition.

He was very edematous over the entire body. The penis and scrotum were enormously swollen. He was voiding but little urine, which was heavily loaded with albumin and of a high specific gravity. The heart was weak but not diseased, the breathing shallow, and he was able to take but little nourishment of any kind. His principal longing was for fruit. The attending physician had used the customary means of treatment, excepting the hot wet pack. This was recommended by me, as was the use of the solution of the lactate of strontium, which was given in as large doses as the child would bear. Another suggestion was also carried out, and that was to take the child back to his home in the valley, thus hoping to give the skin a chance to aid in reducing the accumulated fluid. After taking him home, the attending physician reported that improvement began promptly and recovery rapidly ensued. After six months he told me that his little brother had fully recovered so far as he was able to discern.

The prognosis, in both of these cases, was grave on account of the aggravated symptoms and the age of the patients. They are of interest, however, in that the general symptoms and age were about the same. But in the one case the cause of the kidney involvement could not be determined, while in the other the cause was attributed to the whooping cough. In the first case, however, we might ascribe the cause to cold and wet weather, but it has been observed that exposure to inclement weather very rarely gives rise to acute degenerative nephritis.

As the prominent symptoms in these cases are albumin, high specific gravity and edema, I want to state that these symptoms are especially found in interstitial and chronic parenchymatous nephritis, active hyperemia, catarrhal nephritis, parenchymatous degeneration, passive hyperemia, and acute nephritis. In acute nephritis the amount of albumin depends upon the extent of involvement of the glomeruli, and the amount of casts depends upon the extent of the tubules affected.

A word about edema in renal disease. As this is a common symptom, it has always puzzled me to explain, to my own mind, the cause of its presence. Edema is the accumulation of watery fluid from the blood vessels, into cellular tissues and lymph spaces. Several theories have been advanced in explanation of this. 1.—the original theory was that, because there is an accumulation of the daily quantity of urine, the tissues are saturated with the water not excreted by the kidneys. 2.—Edema is the cause rather than the result of diminution. 3.—Transudation is due to the changes in or injury to the endothelium, increasing the perviousness of the blood vessels. None of these theories are fully tenable because the etiology and pathology of edema have not been satisfactorily explained. Hence, another theory was pronounced by Landerer, which is, that the relaxation of the tissues and loss of elasticity prevent the forcing of natural lymph into circulation, and as a result, a watery infiltration of the tissues ensues.

To meet and treat the symptoms of edema and ascites requires some thought concerning the condition of the patient. Of the three kinds of expellants, namely, diaphoretics, diuretics, and cathartics, the latter are indicated when general edema and threatening uremia exist. They are more certain in their action. Podophyllin, 1-10 grain, may be given repeatedly to a child 5 years old. Compound jalap powder, 5 to 10 grains, may also be used. A bath, 105 to 110 F., with the child wrapped in a woolen blanket, may be given for fifteen or twenty minutes. Then remove the child, take off the wet blanket and wrap in dry, hot blankets until reaction sets in. You may also add muriate of pilocarpin, in doses of 1-20 of a grain, by the mouth, to a child of 2 years, or hypodermically, to one 5 years old. Where ascites is extreme, tapping is of value. Teaspoonful doses of infusion of digitalis, every four hours, to a child 5 years old, is best.

TRAUMATIC AFFECTIONS OF THE UVULA

SEYMOUR OPPENHEIMER, M.D.

Laryngologist to the University Medical College Dispensary; Instructor in Laryngology at the University Medical College; Consulting Laryngologist and Otologist to the Hebrew Sheltering Guardian Society.

NEW YORK CITY.

From its peculiar position in relation to the oropharynx the uvula would appear to be extremely susceptible to severe traumatic influences, as it is constantly subjected to minor traumatisms in deglutition and excessive vocal efforts, yet reported cases of damage to this portion of the pendulous palate are comparatively rare, the text-books containing little or no reference to traumatic affections. The anatomic structure of the uvula, and its mobile characteristics, render it to a great degree exempt from traumatism otherwise

affecting the tissues in its immediate proximity. The mucous membrane covering it, especially at the tip, is of firmer consistency than that of the surrounding tissues, and is also less dense in structure. As an additional protection against damage from the lodgment or impact of foreign bodies, is the absence of glandular stomata or crypts, as occur on the pharyngeal walls and tonsils.

Pathologic alterations of the contour and structure of the uvula, as the result of traumatic influences, may best be classified from an etiologic standpoint, and may be divided into five classes. The first being extensive injury, the result of forcible contact with resisting foreign bodies, the soft tissues of the uvula being caught between the foreign body and the pharyngeal wall; the second class embraces those cases in which the mucous membrane is pierced by a minute body, such as bristle or stiff hair; the third class embraces the more frequent cases in which, as the result of swallowing caustic materials, and also in the application of caustics to adjoining regions, the uvular tissues become subjected to chemical traumatism. The fourth class is seen in accidental cases, in which this portion of the palate is subjected to traumatism as the result of operative procedures directed to the tonsils, larynx or nasopharynx, the uvula accidentally becoming engaged in the handle of the forceps, or whatever instrument of similar nature is being used. The fifth class results from indirect traumatic influences, being by far the most important from the standpoint of the individual as it occurs in singers as the result of excessive or ill-advised efforts at vocal exercise.

As illustrative of the amount of damage that may be done to the uvula as the result of forcible contact with a hard, resisting foreign body, the following case is presented:

C. J., a colored male, aged 30 years, was seen Feb. 23, 1899, when he presented the following history: While under the influence of alcohol and smoking a corn-cob pipe, he ran against a stone wall, on the evening previous to which he was seen. The stem of the pipe was violently forced into his throat and severe pain and bleeding ensued, lasting the entire night. The pain was intense, referred to the base of the tongue and pharynx and presented the taking of food, either solid or liquid; even the mere act of swallowing being impossible on account of the increase of pain produced at such times. The pipe had been held on the left side of the mouth and examination showed a deep laceration on the same side of the tongue and, after inflicting this damage, the stem of the pipe had evidently passed backward and jammed the uvula against the posterior pharyngeal wall. The uvula was perforated directly in the median line, 2 millimeters below its junction with the soft palate, the perforation being partial inasmuch as it did not go through the mucous membrane of the posterior aspect and corresponded in shape and size to the stem of the pipe. Inflammation and edema were severe and prevented to a great extent the opening of the mouth, but hemorrhage had spontaneously ceased. The parts were painted with ichthyol and an astringent mouth wash given, with prompt relief in a few hours, patient making uninterrupted recovery in a few days.

It is of interest to note that in cases of severe traumatism of the uvula edema is not as well marked as in apparently more trifling injuries, scarification rarely being necessary, as free bleeding has already taken place and the amount of swelling is limited. Another point of interest is the rapid improvement without the least suggestion of septic infection, following the use of antiseptic and astringent applications. It is also remarkable in the cases of severe local injury with what rapidity the healing of the lacerated or punctured wound takes place; this case, being typical of its class, well shows this marked recuperative power, as in forty-eight hours after the patient was first seen all the symptoms had disappeared and but slight congestion remained around the wound.

Of more frequent occurrence than severe lacerated or punctured wounds of the uvula are the minute lacerations of the mucous membrane, and oftentimes of the deeper structures, as the result of small foreign bodies, such as a bristle from a tooth-brush, etc. Belonging to this class is a case reported by Fisher,[1] in which the uvula was pierced by a bristle; severe hemorrhagic infiltration occurred, the uvula being greatly swollen and dark purple in color from the large amount of blood effused into the tissues. Small foreign bodies producing traumatic injuries of the uvula may induce pathologic alterations seemingly out of all proportion to their size. When the foreign material, such as a minute fish bone, merely enters the surface epithelium and does not penetrate into the deeper tissues a slight grade of inflammation results, dependent on the length of time the foreign body remains *in situ*, and then rapidly disappears without further treatment as soon as the offending particle is removed. The subjective symptoms are, however, most annoying, as the patient complains of the presence of a foreign body even for a considerable time after all traces of it have been removed, and the dysphagia, peculiarly, is very rarely referred to the uvula directly, but most frequently to the tonsillar or epiglottic regions. The characteristic features predominating, when a minute sharp-pointed body enters deeply into the uvular structures, are edema and extravasation of blood. The uvula becomes enormously increased in size and, as a rule, hemorrhagic extravasation of the uvular tissues is nearly always of traumatic origin.

The general symptoms of the varied traumatic inflammations of the uvula are, in the majority of cases, not well marked, except when the traumatism is severe, when the inflammatory reaction involves the adjacent parts by continuity of structure and pharyngitis results, attended with a moderate degree of temperature, such as occurs in the regular course of acute non-specific inflammations of this particular region. Within a few minutes or hours after the infliction of the injury, and dependent upon its extent, the patient complains of a sense of pharyngeal discomfort, which may in severe cases, as in the one reported here, amount to intense pain. The pain is constant, but becomes markedly exaggerated during deglutition, and food is refused for a limited time until the acute symptoms subside. Dependent on the amount of edema and inflammatory reaction are the changes in the voice. The functions of the uvula are for the time abolished, the resonating capacity of the parts is impaired, and articulation becomes thick from the swelling of the uvula and from the increased amount of mucus collecting in the oropharynx, due to indirect stimulation of the secretory glands. On account of the increased amount of saliva and mucus, there is a constant desire to swallow, this also being enhanced by the sensation of the presence of a foreign body which seems a constant local symptom in practically all cases. This foreign body sensation, in a few instances, may be due to the presence of a minute particle of adventitious material partially embedded in the mucosa and, from the constant motion and enlargement of this part, the tissues in its immediate locality are irritated by the foreign matter abrading their sur-

face with every act of swallowing, thus keeping up the inflammation. In the majority of cases, however, this is but a nervous element, but in all, careful search under good illumination should be made, and any adventitious material immediately be removed.

Dyspnea only occurs when the tissues are enormously increased in all their dimensions by the effusion of blood or serum into the structure of the uvula; it may be extreme, requiring immediate operative procedures, as in a case reported later in the course of the paper, and is also present in the class of cases where the traumatic influences are indirect, as in excessive vocal strain. The non-appearance of dyspnea, when the uvula is subjected to direct and severe traumatism, is readily explained by the laceration of the tissues as a result of the foreign body, allowing the fluids to escape, and in this manner excessive infiltration by liquids is prevented. Cough is not as commonly present as the other symptoms mentioned, and is rarely complained of when the parts are edematous, as in this condition the increase in the size of the uvula is one of bulk, that is, in the lateral direction, while the cough factor depends on the elongation of the tissues and the contact of its tip with the epiglottis. When cough is present, however, it is of an irritating, tickling variety and promptly disappears on the application of an astringent, so as to draw the elongated uvula away from the larynx or base of the tongue.

Acute uvulitis, characterized by the presence of a considerable amount of local edema, may result from the inadvertent swallowing of boiling water, acids, ammonia or any chemical irritant, the uvula participating in the general inflammation of the oropharynx. Cases in which the traumatic effects of irritant chemicals are alone limited to the uvula are much more frequently observed, and occur as the result of ineffectual or unskilful attempts to cauterize the adjoining tissues for therapeutic purposes. Under these circumstances but a limited portion of the organ is involved, although the resultant edema and inflammatory reaction is far in excess of the amount of damage inflicted. J. Solis-Cohen[2] reports a case where caustic applications produced an intense edematous condition of the uvula, and numerous other cases similar in character have been recorded in the literature. The loose structure of the upper two-thirds of the uvula, like that of certain portions of the larynx, renders it susceptible in a marked degree to the action of caustics, and it is surprising in what a short period of time, after a minute amount of caustic material has been inadvertently applied, the edema develops.

Injuries, the result of carelessness or accident during operations on the pharynx or larynx, are of more or less frequent occurrence, especially when the electrocautery or tonsil snare is used without proper precautions as regards the protection of the surrounding tissues. The resultant burn differs but little from that due to the action of chemical caustics when the traumatism is the result of the careless application of the electrocautery, while minor wounds due to catching the uvula in the joints of instruments are usually of little moment, except as they to a moderate degree augment the inflammatory reaction and for a short time cause the patient added discomfort. Objectively, when the uvula is injured by being caught in instruments during operations in this locality, we find a small laceration or bruise of the mucous membrane the most common feature, while traumatic ulcers the result of caustics are apt to develop in a few days after the injury has been inflicted, but readily heal under appropriate treatment. The liability to local and circumscribed sepsis after the infliction of this class of injuries upon the uvula, seems to occur more frequently than as the result of other forms of traumatism, as the injury, when due to instruments, is usually of a contused and lacerated variety and the resultant ulcer develops as the result of septic infection through the buccal cavity. Especially is this noticeable should the patient have decayed teeth and the parts be not thoroughly cleansed, as is frequently the case, before any operative procedures are instituted.

The first four varieties of traumatism, to which the uvula may be subjected, are all the result of direct violence to this portion of the oropharynx, while the fifth form results indirectly from excessive strain of the parts and the symptoms are out of all proportion to the apparent amount of injury inflicted, the ill-regulated column of respired air and the irregular muscular action combining to produce this variety of indirect traumatism. The following case illustrates in a forcible manner this form of traumatism, and is reported by Le Jeune[3]. He was hastily summoned to see a female singer, who was supposedly choking to death. The intense dyspnea came on after she had been singing for a time and immediately followed extreme and prolonged efforts to reach a note beyond her compass. The subjective symptoms were dyspnea, with the sensation of a foreign body in the throat. The uvula alone was affected and was of a dark purple hue and the size of an olive. Incision was immediately made, and gave exit to blood, which had extravasated into the tissues of the uvula; immediate relief was given the patient.

In a similar manner small submucous ecchymoses are produced by excessive and violent efforts to clear the throat, as in the act of hawking. The effects of this form of traumatism upon the voice, both singing and speaking, is marked; the range is lost, as is also the clearness and strength, and often it becomes tremulous until the uvula regains its normal tone.

No special forms of treatment are indicated when the uvula suffers as the result of traumatism, but when the tissues are lacerated, the local application of ice is most gratifying in conjunction with antiseptic and mild astringent applications. While in inflammations the result of inadvertent applications of caustics or instruments in operative procedures, bland soothing applications are valuable, such as ichthyol in weak solution. When edema is extensive, or the parts much enlarged from hemorrhage into the tissues, and dyspnea becomes imminent, multiple incisions promptly relieve all threatening symptoms and the uvula rapidly regains its normal size.

706 Madison Avenue.

REFERENCES.

1. Fisher: Deutsches Med. Woch., Leipsig, No. 42, 1894.
2. J. Solis-Cohen: Diseases of the Throat.
3. Le Jeune: Provincial Med. Jour., Leicester, Eng., Feb. 1, 1894.

Clinical Reports.

TWIN CONCEPTION.

J. PROSSER HARRISON, M.D.
RICHMOND, VA.

The lady referred to in this report is a Virginian, white, 42 years old, married eighteen years; has had seven pregnancies to the full term, all of the children living, and three miscarriages at two, four and six months. She was taken unwell on

November 29 last, and the usual symptoms of pregnancy progressed without incident until May 30, when she felt a sudden gush of water from the vagina, followed by quite a severe hemorrhage. I confined her to bed for ten days, and there being no further symptoms she got up and went about her usual household duties. On July 4, she had two sharp pains in her abdomen and went to the closet to relieve her bladder, when in her words, something passed from her, but was not detached, and, being afraid to pull on it, she supported it to the bed, where I found her about half an hour later. I found a fetus expelled and cord attached; used gentle traction and then quite forcible traction, without result; introduced my finger and found os sufficiently dilated to introduce three fingers, and felt head of living child; followed the cord along the right side of uterus as far as my finger would reach, and, finding no attachment, used considerable force and detached the cord. There was no hemorrhage, no discharge, no pain; in fact, no symptoms. I kept the patient in bed. The fetus was about three months growth; genitals sufficiently developed to distinguish the sex (male); head about the size of tennis ball, and compressed flat. There was no decomposition, no maceration. It looked as if it had been immersed in alcohol.

On July 7, the mother was delivered of a seven-month girl, after a normal labor. After delivering the placenta, I introduced my hand, but found no second placenta. After washing the placenta I found a portion of it, outside the membranes, as large as my hand, presenting the same appearance as the expelled fetus. There is no doubt in my mind that this was a twin conception, and not a superfetation, for there was only one placenta. The mother made an uneventful recovery; the child is well and growing.

A CASE OF PRIMARY RETROPERITONEAL SARCOMA.

RICHARD R. SMITH, M.D.
SURGEON TO BUTTERWORTH HOSPITAL.
GRAND RAPIDS, MICH.

The following case of retroperitoneal sarcoma is reported because of its rarity. The extremely softened condition of the tissues was unusual, perhaps unique. In Steele's[1] summary of the literature of the subject he found 22 cases, or 35 per cent. of the total number of cases reported were cystic, and in 15 of the 22 the degeneration a hemorrhagic one, the center of the softened growth being filled with a dark brown fluid or semi-fluid material. This softening was so extreme in the case here reported as to make it impossible to name its exact origin. That it started in the upper retroperitoneal space was apparent. The case also presented many of the objective symptoms of a pancreatic cyst, which makes the case of interest in considering that affection.

T. A. D., male, aged 27, farmer, gave no history of syphilis or gonorrhea. He had good health until the spring of 1900, when the left scrotum gradually became swollen, and in August it was tapped and fluid removed by Dr. Asa L. Taylor, his family physician. After this, the hydrocele filled again and then the fluid disappeared spontaneously. In September the patient began to have pain in the hypogastrium; anorexia, distress after eating, belching of gas and occasional constipation occurred, and he had to give up work. Dr. Taylor, who examined the abdomen several times at the beginning without finding anything abnormal, on November 10 noticed a tumor, which increased rapidly in size up to the time of operation, November 30. One week before operation the patient became jaundiced, this condition increasing rapidly. The stools were clay colored and the urine very dark. He vomited several times in the three weeks previous to operation and the pain in the hypogastrium was quite severe.

Examination.—Man of fairly good physique, fairly well nourished, severely jaundiced and no marked cachexia present. The examination of the heart and lungs revealed nothing abnormal. Pulse ranged between 70 and 80, and temperature between 99 and 100. Examination of scrotum shows right testicle much smaller than usual, but otherwise apparently normal. Patient thinks it has diminished in size since last summer. Left scrotum evidently contains some fluid and the epididymis feels hard and nodular but not enlarged. Abdomen is flat. Just above navel and to the left is a slight bulging. A tumor can be distinctly felt here extending slightly below, two inches to the left of the median line and about an inch to the right. It is globular, fairly hard, non-fluctuating but slightly tender; does not move with respiration, and is tympanitic on percussion. Its most prominent portion seems to be just above and to the left of the umbilicus. Tumor shelves off rapidly into the depths of the abdomen. Liver and spleen dulness normal. Exploratory operation advised.

Operation.—Abdomen opened by vertical incision an inch to the left of the median line, extending one and a half inches above and the same distance below the umbilicus. The omentum presented, seemingly very much engorged with blood. The transverse colon lay just below the most prominent portion of the tumor. In attempting to get down to the tumor, the hemorrhage was profuse; then there was a sudden welling up of blood from the depths. The transverse colon and omentum were pushed quickly upwards and the tumor gotten at from below. It was seen that the blood came from a hole in the tumor, the thin walls of which were grasped and drawn through the incision. The hemorrhage had been profuse and it was some minutes before it was controlled by packing. It was not deemed advisable to attempt to bring the sac through the mesentery on account of liability to hemorrhage, and it was stitched to the abdominal wall, the omentum and transverse colon being pushed upward. The sac was packed with gauze. The patient was severely shocked, from the severe loss of blood, but rallied within a few days. Bile passed with the first movement of the bowels and jaundice disappeared completely in about two weeks. The general condition seemed to improve for a while, but the improvement was only temporary. He lost flesh rapidly and died four weeks after operation. The emaciation towards the last was very rapid. About two weeks previous to death, there appeared a bulging just above the incision. This pushed forward with remarkable rapidity, finally pushing the sac from the abdominal wall where it had been stitched and at death presented at least two inches above the surface of the abdomen. The mass oozed blood almost constantly, and in the last two days in large amounts. Patient complained a great deal of severe pain in the back for the last two weeks. Bowels were moved with great difficulty.

Postmortem.—Lungs and heart presented nothing abnormal except some fresh adhesions about the base of the left lung. The tumor mass projecting above the surface of the abdomen consisted of semi-solid material, mostly blood-clots, and a gray, mushy, partly organized material throughout. This mass occupied a cavity running back to the spine, then upwards, filling the left renal space and pushing the kidney outward and extended down to Poupart's ligament. It was surrounded everywhere by intestines firmly agglutinated but apparently not involved. The transverse and descending colons were pushed upward and outward against the wall of the abdominal cavity. In the structure of the left testicle was a small hard mass, which was removed for examination.

Report of Pathologist.—Organized pieces of the tumor were removed from several parts of the growth. Sections of some of these presented the appearance of a small round-celled sarcoma with a small quantity of stroma. In other sections taken from near the periphery there was much more fibrous tissue and many blood vessels. The tumor may be classed as a small round-celled sarcoma undergoing degeneration, which is so frequently met with in this class of malignant growths.

The nodule removed from the testicle was examined and found to be composed of fibrous tissue. There was no evidence of its being associated in any way with the abdominal growth.

1. Steele: Am. Jour. Med. Science. March, 1900.

Professor Howntze, a Danish physician, stated at the Congress of Scandinavian Surgeons, that he had cured several cases of cancer by freezing them.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street : : Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

SATURDAY, SEPTEMBER 7, 1901.

THE NATURE AND THE CAUSE OF PUERPERAL ECLAMPSIA.

At the Ninth Congress of German Gynecologists at Giessen, May 29-31, 1901, eclampsia constituted one of the subjects for an exhaustive general discussion, which was introduced by Fehling and Ryder.[1] Inasmuch as this discussion probably represents quite fully the present views concerning the nature and cause of eclampsia it may be of some interest to briefly review the principal facts and opinions brought out.

In his report on the pathogenesis Fehling announced the following theses: Puerperal eclampsia is a distinct and characteristic process, which occurs only in the period of gestation. There is no special form of placenta, no special form of renal or hepatic disease in eclampsia; it is not necessarily connected with ureteral dilatation, but albuminuria is almost always present. There is no definite pathological anatomy of eclampsia. That it is contagious has not been shown, and there is no proof of Bouchard's claims that it is caused by an increased toxicity of the plasma of the blood associated with diminished or absent toxicity of the urine. Eclampsia is neither an hepatotoxæmia nor a leukomainemia. The lesions of eclampsia are associated with the presence in the blood of some coagulative substance. Finally, eclampsia is an intoxication of fetal origin.

A very important contribution to this discussion is Schmorl's report on the pathological anatomy based on a thorough study of the organs in no less than 73 cases. From the results Schmorl finds that the process has a fairly definite pathological anatomy, thus invalidating one of Fehling's theses. When the whole complexus of morbid changes are considered one must agree with Schmorl. The kidneys without exception are the seat of albuminous and fatty degenerative changes with more or less necrosis. These changes affect the secreting tubules and occur in varying degrees of extent and intensity. Thrombosis is frequent in the glomerular capillaries, as also in the arterioles and veins. Ureteral dilatation is of no greater frequency than in the non-eclamptic. In three cases there were hemoglobin infarcts and hemoglobinemia, but the exact cause could not be determined. In the liver there are albuminous changes in the cells, and hemorrhagic and anemic necrosis were present in 71 cases. In the two cases in which they were absent there was total thrombosis of the main stem of the portal vein. These necroses, when small, are situated in the peripheral parts of the lobules and invariably accompanied with thrombosis of the inter- and intra-lobular capillaries and often also of the larger vessels. The necroses do not stand in any relation to the severity of the symptoms; and they are not due to traumatism during the convulsion, because there may be very few in cases with many and severe convulsions and very many in cases with few and light seizures. In addition to secondary pneumonic processes, the lungs showed thromboses and hemorrhages in 66 cases. Fat embolism was also frequent, the source of the fat being, it is thought, the bone marrow, the subcutaneous tissue and possibly also the fat tissue in the pelvis. The most constant changes in the brain are small softenings and hemorrhages, especially in the cortex, but also in the brain stem and in the lenticular nucleus. Thrombosis and possibly increased blood pressure during the convulsions are regarded as the cause of these changes. In the heart are degenerative changes, hemorrhages, necroses and thrombi, but the latter are not as common as in the other organs.

Schmorl does not attach any special importance to embolism of parenchymatous cells in eclampsia. Even placental cell embolism are not distinctive because it occurs in non-eclamptics. Schmorl is no longer disposed to attribute to placental cells the ability to liberate coagulative substances. He has not seen any other disease with the complexus of changes outlined in the foregoing. While no single lesion is absolutely characteristic or pathognomonic, the sum total of all the changes is as distinctive as in many other diseases. From the nature of the lesions he would assume that a peculiar substance enters the blood and leads to multiple thromboses. Whether this substance comes from the placenta or from the fetus can not be settled at this time. Possibly the applications of the principles of cytolysis may throw some light upon this dark problem.

It is regrettable that careful and complete systematic bacteriologic examinations do not accompany this valuable report which is based upon such a wealth of observations. The relations of bacteria and bacterial products to thrombosis are of such importance that they surely merit consideration in connection with eclampsia; and the clinical picture and pathological anatomy of eclampsia do not of themselves definitely exclude a microbic etiology. Indeed, Albert advances the theory that eclampsia is a microbic intoxication from the decidua.

Strassmann deals with the question of the why and the when toxic substances are retained in case eclampsia is a toxic disease. Kundrat and after him Herzfeld advanced the theory that abnormal divisions of the abdominal aorta may result in such displacements of the ureters as to subject them to compression. The frequency of eclampsia in primiparæ and in twin birth, in contracted pelvis, and the fact that the attacks may cease

1. Report in Centralbl. f. Allg. Path. u. Path. Anat., 1901, xii, 635-648.

after delivery, point to the influence of mechanical conditions. He could not find, however, after an exhaustive investigation, any relation between puerperal eclampsia and anomalous division of the aorta.

In the same discussion considerable reference is made to physical and chemical conditions of the blood and urine in eclampsia. Füth and Krönig found that the maternal and fetal blood have the same osmotic tension and specific gravity, showing that if there are toxins in the maternal blood they do not cause increase in its tension or its gravity. Dienst observed an increased amount of fibrin in both the bloods in pregnancy, and he assumes that during pregnancy a certain amount of poison is produced in the fetus and taken into the maternal blood where it may accumulate in fatal quantities in case elimination is interfered with. Schumacher established that the urine of eclamptics is no more toxic than normal puerperal urine of the same concentration. He regards the toxicity of eclamptic urine when concentrated as dependent entirely upon its hemolytic properties due to its different tonicity from that of the serum of the blood. Schroeder notes that the freezing point of urine in eclampsia falls below healthy urine and sometimes below that of the blood. As the attacks pass away concentration increases, but the observations are not sufficiently extensive to permit any definite conclusions. In connection with this question reference may be made to the article by Stern[2] in which he discusses osmotic pressure in its relation to uremia.

Veit did not find the maternal serum hemolytic for the blood cells of the fetus nor the fetal serum lytic for the maternal corpuscles. By inserting syncytial cells from the rabbit into the abdomen of geese the serum of the geese acquired the power of dissolving the placental cells of the rabbit—a placentolysin or syncytiolysin developed. Normally but few syncytial and placental cells enter the maternal circulation; should a larger number enter, lysins with toxic properties might develop, but Veit adduces no further evidence in favor of this idea.

Taking it all in all we must admit that eclampsia is a toxic disease in which coagulative substances exist in the blood, but the source of these substances has not been determined. No decisive proof is at hand to the effect that the intoxication is of fetal origin.

2. THE JOURNAL, July 27, 1901, p. 256.

NOCTURNAL ENURESIS IN CHILDREN.

Incontinence of urine may result from a variety of causes, but the principal and underlying factor resides, of course, in a relative or absolute weakness of the sphincter of the bladder. This may at times be in a sense conservative, as in the so-called incontinence of retention, when the bladder having become filled and distended to its utmost, the sphincter yields, and urine escapes. Irritation of the walls of the bladder in consequence of inflammation, the presence of new growths or foreign bodies, excessive acidity of the secretion of the kidneys, may result in involuntary discharge of urine. This may take place, further, during states of unconsciousness—even during sleep—and in the presence of various diseases of the nervous system, partly as a result of indifference and partly as a result of anesthesia or paralysis. The control of the urine is a voluntary function, and it is developed in a growing child as volition is evolved—sometimes earlier, sometimes later, in accordance with individual conditions and training.

There is reason to believe that the involuntary discharge of urine that takes place during the night, and sometimes also during the day, in some children, at a time when control of the sphincter of the bladder has usually been acquired, is a neurotic manifestation involving the sensibility of the mucous membrane, or the motility of the muscular coat of the bladder, or both, and Dr. Martin Thiemich[1] expresses the opinion that the disorder is of hysterical origin. He points out that the peculiarity of hysteria in children is its monosymptomatic character. From the study of a considerable number of cases he found that the majority of children suffering from enuresis were the offspring of neurotic parents, so that both heredity and environment contribute to the development of the neurosis. In fact, in many cases a history of enuresis in other members of the family could be elicited. Further, the involuntary discharge of urine not rarely becomes attended with or replaced by other symptoms of hysteria. Finally, the epidemic occurrence of enuresis, in schools and the like, is not unknown, and the best remedy under such circumstances has consisted in isolation.

Neither is the treatment generally employed opposed to the hysterical origin of enuresis. In this connection suggestion plays an important rôle, and mechanical or physical measures—especially the application of the faradic current—are more efficient than medicinal measures. A strong current to the point of causing pain should be employed, and it is a matter of indifference where the electrodes are applied, although it is customary to apply one in the neighborhood of the bladder. Subcutaneous injections of strychnin may likewise be employed, and be made either in the vicinity of the bladder or in some indifferent situation. Adenoid vegetations in the nasopharynx should, if present, be removed, and any local condition, such as preputial adhesions, hyperacidity of the urine, and the like, should be corrected.

THE MULTIPLICATION OF BOOKS.

On account of the rapid increase in the number of books the large library in Paris has been forced into new and larger quarters in order to find room for the rapidly accumulating literary treasures it is intended to house, classify and arrange in an accessible manner. The librarian is reported to have stated that it is becom

1. Berlin. Klin. Woch., 1901, No. 31, p. 808.

ing a more and more serious problem to properly house and arrange the books. If the present rate of increased production continues it will be but a short time before still larger quarters will be absolutely essential. He emphasizes particularly the difficulties of classification and practical arrangement. The overproduction is so excessive that the large libraries are threatened with perpetual and hopeless chaos in their efforts to make the vast accumulations accessible to their patrons. The transitory character and even absolute worthlessness of a large proportion of the publications are pointed out, and the remedy suggested is that writers restrict their production to the greatest possible minimum. The real literature is on the point of being buried beneath a mass of cheap trash. "One can not see the woods for trees."

This excessive literary production is characteristic also of medicine. The number of journals, of reprints, of books, and of printed matter issued from various sources is simply overwhelming. The transitory nature of the larger part of this material is so apparent as to need no emphasis at this time. Real, honest literary study of a fairly popular topic in current medical literature is rendered exceedingly irksome and laborious, because of the vast quantity of rehash and compilation without the addition of a single original idea or suggestion. It is practically out of the question to be in touch with all the literature issued in any one department of medicine, because of the expense and time it would involve to attempt to master the stuff sufficiently well to separate the wheat from the chaff. Not only are lengthy articles produced in large numbers, but they are frequently printed in two or three different places and reappear again and again under various disguises and modifications.

All sorts of medical societies attempt at great expense to issue some form of transactions or proceedings in which they too often simply reprint articles and reports that have appeared already in current periodicals. This custom seems to be spreading also to hospitals and laboratories, which reissue in the form of reports material previously printed. Surely there is a great deal of paper and printer's ink wasted to no particular good purpose in these days, acknowledge though we must that this productiveness betokens scientific activity and interest in medicine.

Some one has characterized America as the land that flows with ink and money, and the first ingredient is certainly liberally used by the medical profession here. The same is true of the medical profession abroad, possibly to a greater extent than here in some respects. In the interest of higher standards and greater concentration and accessibility of our medical literature an appeal must be made to the self-criticism of those who write. Let not your literary activity be measured by the number of papers and addresses printed each year, or by their length, but solely by the quality. And when publishers tempt you to cover again some well-trodden field, yield not!

AUTHORS AND MEDICAL SUBJECTS.

A novelist tells the story that in writing his latest work he called in his family physician to assist him in duly disposing of one of his characters and—here comes the special point of his tale—he received a bill for professional services for the same. While we did not learn the exact state of the author's mind when this occurred, it would appear from his reporting the event that he considered it somewhat extraordinary. Why this should be so is not self-evident unless it be that it seemed to him that doctors could deal only with actualities, and was not aware that medical opinion on fictitious cases has a legally recognized value and is constantly being called for in the courts. The service rendered in this case can hardly be questioned—certainly not when one recalls the too common medical mistakes of writers of fiction. The curious thing is, that the writer who had the sense to call for such aid should have not appreciated its money value.

BOVINE TUBERCULOSIS.

According to a printed interview, Dr. J. G. Adami, the distinguished pathologist of McGill University, while not endorsing Professor Koch's almost absolute denial of the communicability of bovine tuberculosis to man, yet thinks him nearer right than his critics. Among these he includes Lord Lister, Drs. McFadyean, Bang and Nocard. It is, in his opinion, just as extreme an assertion to say there is imminent danger of the transfer in all cases of the animal disease to our species as it is to unqualifiedly deny this, or to consider the peril an altogether negligible quantity as does Koch. For two years he says he has been working on this question in connection with Drs. C. F. Martin and C. Higgins, and apparently his opinions heretofore expressed as to the difficulty and infrequency of such transmission, and the weakness of the evidence of its occurrence have not been changed to any extent by these later researches. Adami's opinion as well as Koch's will carry weight, and together are alone enough to cast a cloud over the universal validity of the generally accepted medical dogma of the danger of bovine tuberculosis to man.

ST. LUKE'S HOSPITAL AGAIN.

A subscriber writes us regarding the notorious St. Luke's Hospital and enclose circular letters, facsimile of diploma, etc., received by him from that institution, and says: "This abominable fraud is being sent out to hundreds of practitioners. . . . On looking over the names and degrees of the 'staff' one would be led to believe that it is one of the most eminent in the whole country." The doctor goes on to state that he writes to urge us to expose it and that it is the duty of medical journals to warn their readers of the swindling concern, etc. We have called attention several times to this Niles (Michigan) scheme for "working" physicians, and we doubt if any regular readers of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION are possessors of their "beautiful diplomas." We can hardly believe that any intelligent physician who acted deliberately could now be duped by the "eminent" names, though their affixes are imposing enough at first sight. They certainly

seem varied enough to satisfy the most liberal minded, including as they do representatives of all schools, with osteopathy thrown in. They only need a few Dowieites, "Christian Scientists," and other voodoos to make the assortment complete. Besides the great Granville, who heads the list, and presumably manages the concern, we see the name of the redoubtable Zwigtman Van Nopper of Independent Medical College fame, who, it is said, toured through India leaving a trail of Armstrong diplomas behind him. After all, the question is whether the doctor who buys one of these certificates and hangs it in his office for the purpose of impressing his patients with the idea that it means something of which he might be proud, is not practicing deceit just as much as the ones who sold him the parchment. While it hardly seems necessary to warn honest physicians against the concern, the attention of the Michigan authorities is again respectfully called to its existence.

THE PHILIPPINE INSULAR BOARD OF HEALTH.

The Philippine Commission has not neglected one of its chief duties, namely, attention to public health, a greater necessity in a tropical country even than in a temperate climate. Without positive knowledge as to the details of previous laws, it is yet safe to say that there has been much needing reform in this line, certainly this is so as regards the practical application of sanitary rules. Manila is already a very different place in this particular from what it was under former control, and the continuance of the good work is provided for, not only for the chief city but for the islands generally, by the enactment of a law constituting and providing for an Insular Board of Health, having full supervision of sanitary matters and vital statistics. The latter is also authorized as well to regulate and disseminate information on sanitary subjects among the people, to draft and recommend suitable laws, including those governing the admittance to the practice of medicine and has also authority to prosecute all violators of the sanitary regulations. The Board is composed of the commissioner of public health, who is chairman, a sanitary engineer, a chief health inspector, the superintendent of the government laboratories, ex-officio, and a secretary; all, except the sanitary engineer and the superintendent of laboratories, are specified to be duly qualified physicians. The chief surgeons of the Army and Marine-Hospital Service, and the president and vice-president of the Association of Physicians and Pharmacists of the Philippine Islands are also honorary members, but without the right to vote. Another enactment provides for government biologic, chemical and vaccine and serum supplying laboratories to act as adjuncts to the health authorities as well as for such other purposes, agricultural, economic, etc., as may be required in the development and betterment of the country and its resources. It is evident that the present government of the Philippines is not one of mere politicians. It is to our interest as well as that of the Filipinos that scientific sanitation is carried out in the islands and there appears to be no danger at present of any serious failure in that respect.

Medical News.

CALIFORNIA.

Smallpox, diagnosed as chicken-pox and Cuban itch, and the patients not quarantined has resulted in at least forty cases of the disease in the Elsinore valley.

Sanitary Recommendations.—Health Officer O'Brien of San Francisco, in his annual report, urges the use of individual drinking cups in the public schools, and the proper fumigation of telephone transmitters, which he considers, "are admirably adapted for the harboring of bacilli."

Trolley Rides for Convalescents.—Dr. Matthew Gardner, chief surgeon of the Southern Pacific Railway Company, has arranged with the Market Street Railway Company, San Francisco, to provide a special car every Monday, in which the convalescent patients of the hospital are given a ride for three or four hours.

Personal.—Dr. F. P. Conac-Marquis was appointed chief surgeon of the French Hospital, San Francisco, August 25, vice Dr. F. Dudley Tait.——Dr. P. C. Remondino, San Diego, has filed a petition in bankruptcy.—Dr. W. J. Bauer has been appointed resident physician of the 26th Street Hospital, San Francisco, vice Dr. Victor E. Putnam, resigned.

CONNECTICUT.

Dr. John J. Wagner, Greenwich, was injured in a runaway accident August 25, breaking his leg.

Personal.—Dr. John H. Billings has resumed the practice of his profession in Middletown.——Dr. Charles W. Page has retired from the superintendency of the Connecticut Hospital for the Insane, Middletown, and will spend the winter in Hartford and go to Europe in the spring.

Examination of School Children.—Drs. Alfred G. Nadler, Percy D. Littlejohn, Jeremiah J. Cohane, Frank A. Kirby and Edwin P. Pitman have been appointed examining physicians for the public schools of New Haven. For the time being they receive no salary, but it is hoped that the value of the service rendered may impel the Board of Finance to make an appropriation that the work may go on.

ILLINOIS.

Smallpox.—Coal City has four cases of sickness which has been pronounced smallpox by the official of the State Board of Health sent to investigate the matter.

Dr. George A. Lierle, Payson, was injured by the overturning of his buggy, August 14, sustaining a fracture of the skull and severe contusions of the chest and back.

Gift to Bloomington Hospital.—Abram Brokaw and his wife have given $10,000 to the Deaconess Hospital, Bloomington, on the condition that the institution be thereafter known as the Brokaw Hospital. The trustees have accepted the conditions and the money.

Peace at Elgin.—Members of the Woman's club look on the action of the physicians with favor. They assert, that in organizing, the doctors simplify matters and make possible an adjustment. The general feeling now is that instead of a preparation for concerted action against the Woman's club the organization of the physicians may be interpreted as an extension of the hand of fellowship.

Personal.—Dr. Roy B. Roberts, Brooklyn, has located for practice in Augusta, succeeding Dr. Chalmer R. Hecox.——Dr. Robert L. Frisbie, Baileyville, has been appointed attending physician at the Home for the Feeble-Minded, Lincoln.——Dr. James W. Smith, Cutler, has moved to Baldwin.——Dr. John T. Lloyd, Pulaski, has moved to Baldwin.——Dr. John C. Kirby, Verona, has located in Morton.

Chicago.

An Examination for District Physicians was held by the County Merit Board, September 4.

Operation at County Jail.—What is said by the lay pressto have been the first operation for appendicitis performed in a jail in the United States, was made on a prisoner charged with murder, August 27, by Dr. Francis W. McNamara.

A fire at the County Hospital, August 27, caused a little damage, threatened for a time to destroy the hospital and created a panic which was quieted only after great efforts by the attendants under the personal direction of Warden Healy.

War on Quacks.—The attorney for the State Board of Health announces that the Board is about to take active meas-

ures for the suppression of the quack doctors, dispensaries and medical institutes "whose advertisements enrich the daily papers and attract the ignorant masses. Several individuals have been summoned on the charge of practicing medicine without license and the first cases are set for September 9.

Smallpox in Chicago.—The August 31 issue of the Weekly Bulletin of the Health Department states that for the first time in more than thirty months the City Isolation Hospital was emptied of smallpox patients last week. Between March 9, 1899, the date of the first case of the series, and August 12, 1901, the date of the last admission, 342 cases of smallpox were discovered in the city, and removed to and treated in the Isolation Hospital. The last case was discharged, recovered, August 28, the resident physician relieved from duty, and the hospital closed. During the period a total of 960,588 persons were examined as to their vaccinal status by the medical inspectors of the Health Department and the public vaccinators, and 220,648 were vaccinated. The greatest number in any one month was 303,725 examined and 44,904 vaccinated in February, 1901, since which time the disease has steadily declined until the city is now free from the pest. This is a very gratifying contrast to the exhibit made by other large cities of the country.

New Rules for County Hospital Staff.—Warden Healy of the Cook County Hospital has issued the following rules as a guide for attending physicians and surgeons, internes and nurses: "Transfers must be reported immediately to warden by interne in charge of patient at time transfer is ordered by attending man. Notice of emergency service and transfer cases should be immediately telephoned to attending surgeon and the particulars of the case given to party answering telephone. Operation blanks must be filled out each day and filed in the warden's office before 9 o'clock the following morning. Duplicate operation blanks must be left with the warden every Saturday before 5 o'clock p. m., for the use of the attending surgeon. The junior surgeon must make the final preparation of patient before operation, both in and out of clinic. The senior surgeon should not be permitted to make such preparations, as it greatly endangers the aseptic result. Instruments, needles, sponges, etc., at operations should be handled entirely by the nurses. Senior internes are directed to comply with and enforce orders and instructions of attending surgeons and physicians as to prescribed treatment for patients assigned to their service, and report to the warden any neglect of patients by nurses or junior internes. They will pay strict attention to rule governing the discharge of patients before 12 o'clock m. each week day. Train cases will be taken to Dunning on Mondays, Wednesdays and Fridays. Ambulance cases Tuesdays and Saturdays. Dunning cases should be reported to the warden's office the night preceding their discharge.

INDIANA.

Dr. J. C. O'Day, Montpelier, has moved to Bradford, Pa.

Dr. Herbert O. Statler is about to move from Goshen to Kalamazoo, Mich.

Medical College of Indiana.—The new $20,000 addition to this institution is nearly completed. It is a three-story building, the lower floor of which is to be used in connection with the Bobbs Free Dispensary. The second floor will be arranged for society halls and the third will be utilized for laboratory and microscopical work.

Insanity Trust Report.—The State Board of Charities today filed a report with the Governor on the investigation of the insane hospitals to ascertain if any sane persons are deprived of freedom. The report says no such persons are confined, and have not been within the last sixteen months, unless in the case of one patient, who probably recovered after he was found insane and before he was received at the hospital, a period of fifty-three days. The report says: "It may be proper for us to suggest that the effort to connect the 'insanity trust' with the hospitals was unfair to the institutions."

KENTUCKY.

Dr. William H. Forgy, Fairview, has disposed of his practice and will move to Pembroke.

Dr. Archibald H. Barclay, Lexington, knocked out a footpad who attempted to rob him, August 25.

Shows and Circuses Quarantined.—The Bowling Green Board of Health met, August 29, and adopted a resolution, establishing a quarantine "against all traveling shows or circuses of any kind coming into and showing in the city of Bowling Green or within two miles of said city limits within thirty days from date.

Conclave Medical Committee.—Under the efficient generalship of Dr. T. Hunt Stucky and the intelligent co-operation of his special medical aids and medical corps numbering ninety-one, the medical arrangements of the Knights Templars' Conclave at Louisville were as nearly perfect as they could be made. Eighteen litter corps stations were established and six ambulances were on duty.

MARYLAND.

Personal.—Dr. William H. McCormick, of Cumberland, celebrated the fiftieth anniversary of his marriage, August 28.——Dr. William H. De Courcey, of Queen Anne's County, is at Bedford Springs, Pa.——Dr. E. Williams, of Anne Arundel County, has gone to Boston.

Smallpox Epidemic Predicted.—The health authorities think that the approaching winter promises a wider prevalence of smallpox in the United States than the country has experienced in thirty years. All signs, they say, point that way, and the local boards of health are urged to take due notice and guide themselves accordingly. The vaccine physicians are instructed to visit the schools on the opening day and vaccinate all who need it. School boards are advised that there is urgent need of rigid enforcement of the vaccination law. Two cases of smallpox have appeared at Cooksville, Howard County, both in negroes. A large number of negroes have come in contact with the cases, and considerable anxiety is felt. Prompt vaccination, isolation and disinfection have been instituted. It is said the State Board will bring action against those responsible for not reporting the cases promptly as required by law.

Baltimore.

Personal.—Dr. H. B. Eggers is at Bridgeton, Pa.——Dr. Alfred Whitehead has gone to the Exposition, and will also visit Canada and the Adirondack Mountains.——Dr. Arthur O. Brickman is at the Blue Mountain House.——Dr. J. D. Fiske is at Atlantic City.——Dr. H. J. Carrick has gone to the Buffalo Exposition.——Dr. F. R. Rich is at Cape May.——Drs. C. C. Peebles and L. Gibbons Smart are in Lancaster County, Pa.——Dr. Isham R. Page is at Cape May.——Dr. John N. Mackenzie is at Narragansett Pier.——Dr. George Reuling has returned from Narragansett Pier.——Dr. M. H. Carter has gone to the Exposition, Niagara and Canada.——Dr. Robert Hoffman has returned from Berlin.——Dr. J. C. Hemmeter is in Montreal.——Dr. T. Chew Worthington is at Atlantic City.—Dr. J. E. Heard is at Dinsmore Beach, Md.——Dr. W. Tunstall Taylor has gone to Boston.

MASSACHUSETTS.

Personal.—Dr. Warren K. French has opened an office in Worcester.——Dr. J. Oswald Vogel has located at Mount Bowdoin.

A hospital for crippled children is to be established on Bumkin's Island off Hough's Neck in Hingham Bay, through the munificence of Mr. A. C. Burrage, who has secured a long lease of the island from Harvard University.

In Memoriam.—The Eastern Hampden Medical Society, at its meeting in Springfield, August 22, passed resolutions in memory of two recently deceased members—Drs. Harry A. Merchant, Monson, and Joseph T. Pero, Indian Orchard.

Italians Spread Malaria.—In the annual report of the State Board of Health Secretary S. W. Abbott says that during the last ten years every case of malaria investigated in Massachusetts has been traced to the presence in the neighborhood of Italian laborers.

Lowell Demands Isolation Hospital.—Agent Knapp, in behalf of the Lowell Board of Health, sent a letter, August 10, to the State Board of Health, asking the latter to take measures to compel Lowell to build a contagious hospital as required by the statutes. The reason is the prevalence of diphtheria and the insufficiency of accommodation.

MICHIGAN.

Scarlet fever is reported to be epidemic in Delray, where from forty to fifty cases have been reported.

Dr. Arthur MacGugan, Kalamazoo, for the last six years on the staff of the State Hospital for the Insane, has resigned, and expects to take a course of special study in Heidelberg.

Embalmers Examined.—By an order of the State Board of Health embalmers in Michigan will be required to pass an

examination and receive a license before they are permitted to practice their profession.

Personal.—Dr. George Dock, Ann Arbor, has returned from Europe.——Dr. Gustav Sweet, St. Joseph, will locate in Montana.——Dr. James A. Anderson, Big Beaver, has sold his practice to Dr. W. S. Gass, Rochester.

Dr. **Henry D. Thomason**, formerly of Albion, but now a major and surgeon U. S. V., on duty in the Philippines, has been made surgeon-in-chief of the Department of Southern Camerines with about 40 posts under his care.

MISSOURI.

Smallpox in malignant form has appeared near Fredericksburg and one patient has died.

Baby Farm Licenses Refused.—The applications for license for five "maternity hospitals," so-called, were refused by the Kansas City Board of Health, August 24.

Dr. **Adams' Estate Sued.**—University Medical College, Kansas City, has sued the estate of its late dean, Dr. Charles W. Adams, for $36,536.90 fees from students alleged to have been received by him and not turned over to the treasurer.

OHIO.

Removals.—Dr. Oliver T. Sproull, from Bentonville to West Union.——Dr. Melvin M. Acker, from Bryan to Butler, Ind.

Chief Surgeon Louis L. Syman of the Detroit Southern Railway has appointed a full staff of assistants and alternates in his territory.

Dr. **Harry P. Findley**, for several years assistant at the Massillon State Hospital, has resigned, and Dr. Edward L. Emrich, Wooster, has been appointed his successor.

Madame "Dr." Kelch, Cincinnati, has been arrested, charged with unlawful practice of medicine in Blanchester. She waived examination and was held over to the Court of Common Pleas.

NEW YORK.

Major William P. Kendall, surgeon, U. S. A., is now stationed at Fort Porter, N. Y.

Dr. **Alton L. Smiley**, Buffalo, has been appointed junior physician at the Manhattan State Hospital at a salary of $900.

Board of Health Conference.—A conference of state and provincial boards of health of North America will meet at the Cataract House, Niagara Falls, N. Y., September 13 and 14.

Typhoid fever is more prevalent in Buffalo this year than it was last year, for the same period. From August 1 to 24, 82 cases were reported to the Health Department. Last year for the entire month of August there were 77 reported. The number of deaths reported is but 7 this year, as compared with 13 last August.

Visiting Physicians.—The following physicians have been visiting Buffalo and the Exposition: Dr. Eugene Smith, Detroit; Dr. Lewis S. McMurtry, Louisville; Dr. Charles A. L. Reed, Cincinnati; Dr. N. R. Coleman, Columbus; Dr. George Henry Fox, New York; Dr. Gebhard Ullman, Albany, and Mr. William Whitford, medical stenographer, Chicago.

Buffalo Academy of Medicine.—Regular sessions of the academy for 1901-1902 commenced at the academy rooms, Tuesday, September 3. The medical section, Dr. Julius Ullman presiding, entertained. Dr. John C. Hemmeter, Baltimore, delivered an address on "Intestinal Dystrypsia," and Dr. De Lancey Rochester read a paper on the "Treatment of Pneumonia."

PENNSYLVANIA.

Personal.—Dr. W. W. Dill has decided to locate in Pottstown.——Dr. Ruth Tustin has moved to Bloomsburg from New York City.——Dr. Walter S. Wilson, Lewisburg, has moved to West Chester.——Dr. Arthur C. Wheeler, Erie, has opened an office in Reynoldsville.

Uniontown Hospital.—A permanent organization of the Uniontown Hospital Association was made, August 20. Dr. Thomas N. Eastman was elected vice-president and Dr. Jacob S. Hackney, secretary of the association. The building fund already amounts to $5000.

TEXAS.

Dr. **Ramsey D. Potts**, Bonham, will locate in Helena, Montana.

State License and Name.—A well-connected criminal bearing the suggestive name of Killum, was arrested for malpractice a short time ago. It developed that he had stolen the license of Dr. Joel A. Blackwell, an esteemed practitioner of Cooper, and had also assumed his name and boldly started out to practice, his sole capital consisting of the license and experience gained while traveling with a horse-doctor.

The following are the resolutions regarding smallpox, adopted at the meeting of the County Judges and Commissioners' Association, held at Dallas, August 8 and 9: "Whereas, smallpox is now and has been widely prevalent over the State during a period of more than three years, thus demonstrating the total insufficiency of our present health laws to furnish the people with the protection against imported pestilential diseases, to which they are justly entitled; therefore be it resolved, that we appeal to His Excellency, the Governor, to recommend to the present session of the Twenty-seventh Legislature to pass an act creating a State Board of Health, with provision for the collection and preservation of the vital statistics of the State; and an equitable distribution of the expense incident to the administration of sanitary measures between the State, the counties and the municipalities thereof, in accordance with the provisions of the Constitution and the recommendation of the late Democratic State Convention in its session at Waco. And be it further resolved, that the secretary of this association be instructed to furnish the Governor with a copy of this resolution as soon as practicable."

GENERAL.

Prof. Paul C. Freer, of the University of Michigan, has been granted leave of absence for one year, with the privilege of more, from the regents. He has been appointed to take charge of one of the Government laboratories in the Philippines.

Tuberculosis in Hawaii.—The records of the Board of Health show an ever-increasing percentage of deaths due to pulmonary tuberculosis. The greatest spread of the disease is among the natives who move from the open air of the country into the closed houses of the towns; they are also lax in their general habits and expectoration.

The Territorial Medical Society of Hawaii met recently and the following resolution was passed: "That the recent attacks made upon Dr. L. E. Cofer, of the U. S. Marine-Hospital Service, for alleged impropriety and discrimination in examining passengers on the *America Maru*, were unfair, uncalled for and not justified by the facts."

Chiropodists Not Required in Army.—The Surgeon-General of the U. S. Army denies the necessity of pedal surgeons in that service, as recently recommended by Col. Philip Reade. The men selected for military service are not of the lame and decrepit variety, and if anything happens to their feet it is more likely to be sufficiently serious to require the attention of the regular surgeon.

Canadian Medical Association.—The most successful meeting of this Association ever held was that in Winnipeg, Manitoba, on August 28 to 31. Much progress was made in the question of Dominion registration, and a Medical Protective Association formed. The next meeting of the Association will take place in Montreal. The following officers were elected: President, Dr. Francis J. Shepherd, Montreal; general secretary, Dr. George Elliott, Toronto; treasurer, Dr. Henry B. Small, Ottawa.

Scarcity of Physicians in Labrador.—Dr. Grenfell, superintendent of the mission to deep-sea fishermen, now operating in Labrador, publishes an article exposing the medical deficiencies of Labrador. He found people dying of cancer, dropsy, and scurvy, who had never seen a physician. He found no hospital near, no regular steam service to Gaspé or Quebec, and no means by which the people could procure medical or surgical treatment. He urges the Dominion government to take prompt steps to remedy these conditions.

Inefficiency of the Caldas Serum.—Dr. Caldas is returning to Brazil, since his experiments with the alleged yellow fever remedy have resulted in failure. He and Dr. Bellinzaghi came to this country some weeks ago and endeavored to enlist the co-operation of the Medical Department at Washington, but without success. They then went to Havana and Governor-General Wood was induced to appoint a commission to investigate the claims of the Brazilians. This board consisted of Drs. Gorgas, Finlay, Guiteras and Agramonte. It has finally decided that under no condition should further experiments of the kind be made. A full report will soon be made and filed with the Governor-General.

FOREIGN.

Prize for Van Gehuchten.—The Belgian quinquennial prize for medical research, amounting to $1000, has been awarded to Professor Van Gehuchten for his studies on the brain and spinal cord.

Heidelberg's New Restrictions on Foreign Medical Students.—The lay press announces that the authorities at Heidelberg have decreed that hereafter no foreign students shall be admitted to the medical course who have not passed an examination fully equivalent to the "Abiturienten examination" exacted in Germany.

English Commission on Tuberculosis.—King Edward has appointed the commission to investigate the transmissibility of animal and human tuberculosis. It is to consist of Sir Michael Foster, secretary of the Royal Society; Dr. Germain Sims Woodhead, the pathologist; Prof. J. McFadyean; Prof. W. Boyce, and Dr. Harris Cox Martin.

The French Degree of Colonial Medicine.—The French universities at Bordeaux and Marseilles are instituting a course of colonial medicine, entitling the graduates to the degree of Doctor of Colonial Medicine. The hospitals of Marseilles afford unusual opportunities for studying the diseases prevalent in the French colonies, mostly in the tropics.

Deaths Abroad.—Dr. Holland, gynecologist at Berlin, in his thirty-sixth year. His death was determined by sepsis from a professional injury. Other deaths reported are those of Dr. Fontorbe, professor of surgery at Rochefort; Dr. Salitschew, professor of surgery at Tomsk; Le Roy de Méricourt, of Paris, born 1825, founder and editor of the *Archives de la Méd. Navale*.

Success of the Danyz Bacillus for Exterminating Rats.—The *Deu. Med. Woch.* for August 22 contains a communication from Moscow describing the complete success of the experiments with the Danyz bacillus. It proved very pathogenic for rats, and by mixing the cultures with a concentrated alkaline solution, the acidity of the gastric juice was neutralized, and the virulence of the bacilli maintained unimpaired by passage through the animals.

Alwin Von Coler, Surgeon-General of the German Army, whose death was noted in the last issue of THE JOURNAL, was born March 15, 1831, at Gröningen, of an old patrician family of Hartz origin. After four years (1852-56) in the Military Academy of Berlin, he entered the Dragoon-Guards regiment as acting assistant surgeon, becoming assistant surgeon in 1857 and surgeon in 1863. Owing to his efficiency in the campaign of 1864-66 he was in 1867 promoted to the Medical Staff of the Prussian army, and, in 1868, on the establishment of the Medical Department in the war office was appointed decernent therein. Excepting 1870-71 during which years he was Division Surgeon of the First Active Division, his service in the war department has been continuous. In 1874 he became surgeon-general, in 1885 chief of the Medical Department, and in 1889, surgeon general of the army, chief of the sanitary corps and of the Medical Department of the war office and director of the Kaiser Wilhelm Academy for Military Medical Science. In 1889 he was appointed chief privy medical counsellor, in 1891 lieutenant-general, and in 1892 honorary professor in the University of Berlin. Under Von Coler's administration the organization of the Medical Department of the army for war or peace was placed on a new foundation and the sanitary corps was raised to a high grade of efficiency. It was also Von Coler's constant aim to establish close union of the military with the civil medical profession.

Miscellany.

Vaccine.—Not alone in Cleveland but all over the country are heard more or less positively expressed suspicions of the purity of much of the vaccine virus at present on the market. It is probable, we fear, that there is some fire beneath all this smoke, and yet certain makers of vaccine are now ideally careful and clean in the preparation of the virus. As matters stand, however, the innocent are likely to suffer with the guilty, unless there is designed some effective method of guaranteeing the purity of the virus. If it were possible, it would appear that the manufacture of vaccine should be placed under Federal inspection. The Department of Agriculture, by adding slightly to its very capable scientific staff, could very readily and authoritatively assume this work. Perhaps this reform, which should be demanded by the honest manufacturers for their own protection as well as by the medical profession, could best be compassed by placing a very small revenue tax on vaccine, just sufficient to raise money for the expense of the inspection, and by providing minimum standards of chemic and bacteriologic purity. This is a very important matter which should be dealt with thoroughly by the effectively reorganized American Medical Association. The matter should not be permitted to rest, but should be persistently agitated. No doubt some better method can be devised, and the only point on which the JOURNAL insists is that a means must be found to ensure the purity of vaccine.—*Cleveland Journal of Medicine*, August.

General Hospital in Samara, Russia.—The General Hospital at Samara is located in a handsome park near the western limits of the city, and consists of a number of wooden buildings, in barrack style. Each building does service for seventeen years, when it is removed and replaced by a new one. At present the hospital contains 400 patients. These patients are admitted from all parts of the Samara province and pay 20 kopeks a day. If the applicant is destitute, as is often the case, the district from which he comes pays this small charge for him. We spent half a day in the surgical section, in charge of Dr. Johannes Dsirne, a surgeon of more than a local reputation. We had the pleasure of witnessing two operations for stone in the bladder. Stone in the bladder is quite common in this section of the country, as this surgeon performs annually on an average 100 operations. Although the operating-room lacks many of the modern conveniences, the results obtained would compare well with those in our best equipped institutions, something we must attribute to the pedantic cleanliness of the operator and his assistants. The anesthetic, chloroform, was administered by a female feldscheer or barber surgeon, and two other women of the same grade of medical education rendered assistance. The chief assistant was a recent graduate in medicine. These barber surgeons, male and female, are expected to assist licensed physicians, but are not permitted to operate or prescribe except in cases in which the services of a regular graduate in medicine can not be secured. These barber surgeons must study their profession for four years, and the women are required to take an additional course in gynecology and obstetrics. Both patients were puny boys from the steppes of western Russia. In one case the high operation was performed; in the other the stone was removed by median perineal section after crushing. It is a fact worthy of note that according to the experience of Dr. Dsirne the peasants are almost immune against shock, he in his large experience having only observed one case. Dr. Dsirne invariably sutures the vesical wound in performing the high operation, using two rows of fine silk sutures, excluding carefully the mucous membrane. In most cases uncomplicated by cystitis he has seen the wound heal by primary intention. If cystitis is present he drains. Dr. Dsirne is a careful, conscientious, and dexterous operator. I am glad to know that he will visit the medical institutions of Chicago some time next summer.—Dr. N. Senn, in *Chicago Tribune*, Sept. 1.

Reorganization of the American Medical Profession.—The plan of the Committee for the federation and interdependence of the National, State and County societies is an excellent one. Membership in the county society becomes a prerequisite to membership in the other organizations. The county organization thus becomes an unit of the state association, and the state of the National body. Each is thereby strengthened and made more powerful, each becomes more cohesive and each develops into an effective, offensive or defensive organization which will command respect and consideration because it represents an organized power which is able to reward or punish, both its friends and its enemies. The medical profession in America is large in numbers, but it lacks stability and cohesiveness when called upon to protect its interests against agencies that are detrimental to its welfare. In this it, in no small manner, is similar to that Asiatic nation, the

so-called celestial kingdom, which is great in numbers but whose slight stability and cohesive power renders it an easy victim to its enemies. Reorganization of the medical profession in America is a necessity. This must begin in the county society which is to form the basic part upon which the entire fabric of an organized profession must rest. Upon these is to be built the state organization, and from the State societies must come the chosen few who are to wear the senatorial togas in the parliamentary body of the American Medical Association, the body that is to formulate the policy of the profession on matters of vital interests, the body that is to aid destiny to shape our ends to a satisfactory conclusion, rough hewn though they be, the recommended House of Delegates of the American Medical Association. As recommended by the Committee, regional, tri-state and district societies, save in a few instances, should be abolished. These, as at present constituted, serve but a slight purpose for good, while on the other hand they weaken and detract from the county and state societies that as federated units are essential to the integrity of the National Association. They are parasitic growths on the medical body politic which sap the life strength of the National organization, and as such should be lopped off and allowed to perish. Let their friends and promoters devote their energies to the upbuilding of their respective state and county societies where their efforts will add to the strength of the profession as a body, and where they will hasten and not hinder the consummation of professional unity. In the trinity of National, state and county organizations, a federated union, in which each is developed to its greatest possibilities, will the profession find a power, that, like faith, can move mountains.—*Courier of Medicine*, July.

Book Notices.

THE PRESENT POSITION OF THE TREATMENT OF SIMPLE FRACTURES OF THE LIMBS. An Address Delivered in Opening a Discussion at the Meeting of the British Medical Association held at Ipswich, August, 1900. By William H. Bennett, F.R.C.S., Senior Surgeon to St. George's Hospital. To which is Appended a Summary of the Opinions and Practice of about 300 Surgeons. Reprinted, after revision, from the British Medical Journal, Oct. 7, 1900. Cloth. Pp. 41. Price, $0.80. New York and Bombay: Longmans, Green & Co. 1900.

This little volume is an address delivered before the British Medical Association in August, 1900, and reprinted from the *British Medical Journal* of Oct. 7, 1900.

In it the author briefly states the general plan of treating the ordinary fractures as employed by himself, and particularly emphasizes the advantages of early movement in the treatment of fractures and the employment of splints which can be readily taken off, so that the limb and fracture may easily be rendered accessible.

In an appendix are the answers from about three hundred surgeons in England to certain questions concerning the treatment of fractures, which were submitted to them by the author. As was to be expected, a larger percentage of those surgeons living in London and in large centers adopt the more advanced methods, such as the use of massage, passive movements and operative procedures, than of those living in the provinces. The general status of the treatment of fractures by English surgeons is well illustrated in the little volume.

ON THE USE OF MASSAGE AND EARLY PASSIVE MOVEMENTS IN RECENT FRACTURES and other Common Surgical Injuries and the Treatment of Internal Derangement of the Knee-Joint. Three Clinical Lectures Delivered at St. George's Hospital. By William H. Bennett, F.R.C.S., Senior Surgeon to the St. George's Hospital. Reprinted, after revision, from The Lancet. With 12 Illustrations. Cloth. Pp. 97. Price, $1.40. New York and Bombay: Longmans, Green & Co. 1900.

The author, in his note, explains that these three lectures have been already published in *The Lancet*, the only difference being "a few verbal alterations," and the addition of three illustrations. The author's strong plea for the use of massage and early passive movements in the treatment of recent fractures is very convincing, and the explanations very rational. One criticism, however, might be offered with regard to fractures of the neck of the femur. He does not insist, as some modern surgeons do, that union is nearly always possible, but dismisses the subject by simply advising the use of massage and passive movement without any attempt at fixation. In all other fractures he is very careful to maintain fixation at the region of fracture with the hand while making use of passive motion, or as he terms it, internal massage. His advocacy of the use of the above procedures in the treatment of dislocations, sprains, etc., leaves nothing to be desired. The chapter on internal derangements of the knee-joint deals with the subject in a very clear and concise manner.

A TEXT-BOOK OF OPHTHALMOLOGY. By John W. Wright, A.M., M.D., Professor of Ophthalmology and Clinical Ophthalmology in the Ohio Medical University. Second Edition, Thoroughly Revised. With 117 Illustrations. Cloth. Pp. 378. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1900.

In this work the student and practicing physician learn the why and wherefore of anomalies and methods of treatment and procedure. It contains, among others, chapters on retinoscopy, ophthalmoscopy, injuries, color-blindness, elementary optics, and refraction. The different operations for extraction of cataract are carefully considered, but we miss the orthoptic exercises for muscular insufficiency. An important feature of the treatise is an ophthalmologic glossary; this is not only a convenient but also a necessary adjunct, as is evident from the inaccurate pronunciation of many of our oculists, for instance of the word "chalazion," and even "pterygium."

TRANSACTIONS OF THE INDIANA STATE MEDICAL SOCIETY, Fifty-Second Annual Session held in South Bend, May, 1901. Logansport, Ind.; Wilson, Humphrey & Co. 1901.

The present volume, according to the preface, is the largest every published by the Society. It is certainly a large volume, but the Society is to be congratulated especially that the quality of its contents is so excellent. There are 41 original papers and 2 symposiums, besides several scientific reports; all of these are up to, and many above, the average. The paid membership is 1624, which is but little more than a third of the regular physicians of the state, not a good showing when it is remembered that membership in county societies carries with it membership in the state society. "Efforts to form new societies," says the secretary in his report, "have not been successful during the past year." It would be interesting to know what these efforts were and how they could be made more effective. Two-thirds of the members of the regular profession in a state who do not belong to any society is not a very satisfactory condition. And yet how many states are doing better?

ORTHOPEDIC SURGERY. A HANDBOOK. By Charles Bell Kettley, F.R.C.S., Surgeon to the West London Hospital. Cloth. Pp. 539. Price, $5.50 net. London: Smith, Elder & Co. 1900.

The author says he planned this work nearly twenty years ago, and that it is the result of twenty-two years devoted to thought and labor in the study of deformities and in practicing their treatment. He also says he has "felt a desire to remove some of the dust in which mistaken ideas of what constituted proof had gradually been hiding simple facts about the pathology and treatment of deformities."

He does this by attributing nearly all deformities involving the bones to rickets, and speaks of syphilitic rickets, scurvy rickets, common rickets, rickets of adolescence, etc., practically disregarding other factors, except infantile paralysis. This view is too extreme. There is also a tendency to dodge important points by asking questions, the answers to which are often not forthcoming. For instance, he denies the influence of muscular action in forming the arch of the foot by asking the question: "What muscles arch the Roman nose?" In the etiology of flat foot no mention is made of the effect of trauma in breaking down the arch.

On one page he says that after tenotomy the foot should be immediately placed in the best attainable position, and on the

next that "complete correction should only be aimed at by gradual extension, commencing a fortnight after the tenotomy and prolonged over several weeks."

The fact that the muscle sheath, fasciæ of the neck and other tissues besides the sterno-cleido-mastoid muscle are involved in wry-neck is not sufficiently recognized, neither under the pathology nor when considering the treatment. The chapter on scoliosis is very good; in fact the spinal troubles are better handled than are those of the extremities. While one may be disappointed with the pathology as laid down in the work, there are many valuable points to be learned under Treatment, and it is here especially that the author shows his great practical knowledge and ability.

Married.

STAFFORD P. JONES, M.D., to Miss Mary Wilmarth, both of Marinette, Wis., August 22.

M. R. BEAUDOIN-BENNETT, M.D., Jackson, Mich., to Miss Jean Martin at Trinity Church, Hewletts, L. I., August 21.

HERBERT EMMONS STOCKWELL, M.D., Stockbridge, Mass., to Miss Blanche Newton Cook, Brookline, Mass., September 4.

CHARLES HARRISON FRAZIER, M.D., Philadelphia, to Miss Mary Spring Gardner at the chapel of St. Marys-by-the-Sea, North East Harbor, Maine, August 24.

Deaths and Obituaries.

Thomas Masters Markoe, M.D., College of Physicians and Surgeons, New York City, 1841, died, August 28, at his summer home at Easthampton, L. I. Dr. Markoe was a native of Philadelphia and graduated from Princeton in 1836. After obtaining his medical degree he was made professor of anatomy in Castleton Medical College, Castleton, Vt., and from 1852 to 1854 filled the chair of pathological anatomy in New York University. From 1860 to 1870 he was adjunct professor of surgery in the New York University, and from 1870 to 1879 he filled the chair of surgery in the same institution. In 1879 he accepted the chair of principles of surgery in the College of Physicians and Surgeons, and this position he held until his retirement when he was made professor emeritus. He was consulting surgeon to the New York, Roosevelt, Mt. Sinai, Woman's and St. Mary's hospitals; consulting physician to the Nursery and Children's Hospital, and a member of the New York Academy of Medicine, New York County Medical Society, New York Pathological Society, New York Medical and Surgical Society and the Society for the Relief of Widows and Orphans of Medical Men. He was a frequent contributor to surgical and orthopedic literature.

Alfred Sanford Dana, M.D., College of Physicians and Surgeons, New York City, 1874, a prominent physician of Westchester county, residing at Yonkers, N. Y., was killed by an express train on the Harlem branch of the New York Central railroad at the Bronxville crossing, August 22, aged 50. He was driving across the tracks when an express train rounded the curve and the coachman was unable to get the team over in time.

Homer C. Markham, M.D., New York University, 1859, one of the pioneer settlers and practitioners of Kilbourn, Wis., who served throughout the Civil war as surgeon of the 19th Wisconsin, and then moved to Buchanan County, Iowa, died suddenly at his home in Independence, from Bright's disease, August 18, aged 63.

James B. Massie, M.D., St. Joseph Hospital Medical College, St. Joseph, Mo., 1887, health officer of Houston, Texas, a member of the State Board of Medical Examiners and a successful physician of Houston, died at Fayetteville, Ark., from Bright's disease, after a prolonged illness, August 24, aged 45.

William W. S. Butler, M.D., University of Virginia, Richmond, 1852, died at Harrisonburg, Va., August 18, at an advanced age. He was formerly connected with the U. S. Internal Revenue Service. For several years he resided in Roanoke, Va.

H. P. Mathewson, M.D., formerly a well-known physician of Omaha, Neb., and from 1874 to 1879 superintendent of the State Hospital for the Insane at Lincoln, died suddenly at the residence of his son, in Los Angeles, Cal., August 19, aged 70.

Columbus P. Brent, M.D., Miami Medical College, Cincinnati, 1854, who has practiced medicine in Cincinnati for more than thirty years, died at his home in that city, August 21. He was a member of the American Medical Association.

Joseph Moffat, M.D., University of Michigan, Ann Arbor, 1862, of Washingtonville, N. Y., a member of the Orange County Medical Society and the New York State Medical Society, died at his home, August 16, aged 68.

Abram R. Van Dusen, M.D., Albany Medical College, 1841, one of the oldest and most successful physicians of Columbia County, N. Y., died suddenly at his home in Humphreyville, August 21, aged 81.

James M. Howard, Jr., M.D., Jefferson Medical College, Philadelphia, was dragged to death in a runaway accident at Fairmont, W. Va., August 19. He was a resident of Masontown, Pa.

Robert M. Murphy, M.D., Bellevue Hospital Medical College, New York, 1880, died at his home in Kingston, N. Y., August 22, from apoplexy, aged 52.

Frank B. Smith, M.D., Rush Medical College, Chicago, 1880, died at his home in Springfield, Ill., after a prolonged illness, aged 42.

Russell C. Wyman, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1878, died at his home in Maitland, Mo., August 14.

Societies.

COMING MEETINGS.

American Academy of Railway Surgeons, Chicago, Sept. 12-13, 1901.
Mississippi Valley Medical Association, Put-in-Bay, Sept. 12-14, 1901.
Conference of State and Provincial Boards of Health of North America, Niagara Falls, Sept. 13-14, 1901.
American Public Health Association, Buffalo, Sept. 16-20, 1901.
American Association of Obstetricians and Gynecologists, Cleveland, Ohio, Sept. 17-19, 1901.
Medical Society of the Missouri Valley, St. Joseph, Mo., Sept. 19, 1901.
Nevada State Medical Society, Reno, Sept. 21, 1901.
Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.
American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.
Oregon State Medical Society, Portland, Sept. 25-27, 1901.
Utah State Medical Society, Provo City, Oct. 1-2, 1901.
Idaho State Medical Society, Pocatello, Oct. 3-4, 1901.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Nashville, Tenn., Oct. 8-10, 1901.
Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.
Vermont State Medical Society, Montpelier, Oct. 10-11, 1901.
New York State Medical Association, New York City, Oct. 21-24, 1901.

Tri-State Medical Society of Alabama, Georgia and Tennessee.—The thirteenth annual meeting of this Society will be held at Nashville, October 8, 9 and 10. The secretary is Dr. Frank Trester Smith, Chattanooga, Tenn.

Piscataquis County (Maine) Medical Association.—The annual meeting of this Society was held in Dover, August 15. The following officers were elected: Dr. Ralph H. Marsh, Guilford, president; Dr. William Buck, Foxcroft, vice-president; Dr. Charles W. Ray, Sangerville, secretary, and Dr. Alvin H. Stanhope, Dover, treasurer.

Trenton (N. J.) Medical Library Association.—At a meeting of physicians held in Trenton, August 22, it was decided to form a permanent organization for the purpose of establishing a medical library in connection with the Free Public Library, and Dr. Horace G. Norton was made president; Dr. F. V. Cantwell, vice-president, and Dr. George N. J. Sommer, secretary and treasurer.

Franklin District (Mass.) Medical Society.—This old Society, now in its 51st year, has just issued a booklet giving the names of the officers and members, and the programs of the meetings of the past year. There are 32 members, the oldest of whom is Dr. E. A. Deane, of Montague, who became a member in 1862, and is called the "dean" of the Society. The first officers of this society were Stephen West Williams, Deerfield, president; the first secretary and treasurer was James Deane, of Greenfield. The first members to be admitted were Stephen J. W. Talbot of Shelburne Falls and Charles L. Knowlton of Ashfield on June 3, 1850.

ELEVENTH FRENCH CONGRESS OF ALIENISTS AND NEUROLOGISTS.

Held at Limoges, August 1.

President's Address.

In his presidential address Gilbert-Ballet remarked that it is dangerous and presumptuous to fasten a stigma on the offspring in case of certain accidental affections of the nervous system, such as ataxia, general paralysis or hemiplegia from a circumscribed lesion. He concluded by emphasizing the tendency of the new century to regard the pathology of the nervous system, and especially mental pathology, from the standpoint of society at large. The study of the psychology of a crowd will lead to a knowledge of its pathology. The crowd has its own individuality, its special emotions, reactions, obsessions and morbid impulses, the same as the individual.

Joffroy reported two cases of general paralysis in which the temperature suddenly began to fall and the patients died in three to five days with a temperature of 25 and 27 C. (77 and 81 F.). One patient was in coma at the time, but the other had no symptoms of coma, convulsions nor diarrhea.

INHERITED DEGENERACY.

Bourneville announced that hereditary syphilis has been noted in only 1 per cent. of the idiot, imbecile or epileptic children in his service, but alcoholism was evident in the antecedents of more than 40 per cent. He stated that in 87 families in which one or both parents were engaged in handling white lead, mercury, phosphorus, copper, etc., 52 per cent. of the children died, and 21 per cent. of the surviving 200 children were idiots or epileptics. This shows that about 73 per cent. of the children of parents following an unhealthy trade are seriously or fatally affected. He also mentioned several instances of transient purpura occurring after epileptic seizures.

Practical Application of Mirror-Writing.

In a communication on this subject Meige called attention to the fact that mirror-writing is the spontaneous effort of the left hand to write, in persons writing normally and fluently with the right hand. A similar phenomenon is observed with other movements which the right hand has learned to perform. The left hand spontaneously reflects, in reversed order, the movement or action of the right hand. What the cortical center for the right hand has learned, is reflected on the center for the left hand, which is thus unconsciously educated to a certain extent. When a center presides over a movement, the symmetrical center has a tendency to command the same movement, but in reversed order. Consequently in re-educating a member, the task will be much facilitated by having the symmetrical member execute and repeat the same movement.

Juvenile General Paralysis.

Régis observed that a hundred cases of general paralysis under 20 could be collected in literature. Usually hereditary syphilis can be incriminated, but Westphal has reported a case of general paralysis in a girl of 17, traceable to syphilis acquired at 7. Ballet has observed several instances in which the paralysis appeared three to five years after the syphilitic infection.

Evolution of Syphilis.

Brissaud remarked that his experience is confirming Fournier's assertion, that syphilis is undergoing a process of evolution in our day, in virtue of which the manifestations during the secondary period are becoming milder and milder, while those of the tertiary period are becoming more numerous and more formidable. Régis proclaimed his conviction that tuberculosis or any other infection may be the etiologic factor in general paralysis—and not necessarily always syphilis. The first address was on

Acute Delirium.

Carrier's statements were generally approved that acute delirium is a syndrome of a toxi-infectious nature, depending on various infections and intoxications, and is not a morbid entity. The nervous elements are altered by the pathogenic agent and hence allow the development of secondary autointoxications, which are the cause of its gravity. Crocq, of Brussels, aroused much discussion by his address on the

Physiology and Pathology of the Muscle Tonus, Reflexes and Contractures.

The routes of muscle tonus in the lower vertebrates, he said, are the shortest possible. The higher in the animal scale, the more the longer routes take the place of the shorter, until in man, the long routes for the tonus of the voluntary muscles are the normal and the only ones. The sphincters still retain the short routes. Excitation of a voluntary muscle inhibits the tonus of its antagonist, and the reverse is also true, i. e., that with diminished tonus in one muscle the tonicity of its antagonist is increased. Crocq adds three new laws to these: 1. Complete destruction of the central or peripheral motor neurons or of their cylinder-axis prolongations entails the atony of the corresponding muscles with complete and definite laxness. 2. Their partial destruction entails diminished tonicity; and 3, lesions of the tissues surrounding the nerve cells or their prolongations may hamper the nerve in its functional activity by mechanical compression from the injured tissues, and induce a functional erethism manifested in an exaggeration of the muscle tonus. The reflexes were formerly all attributed to the spinal cord, but we know now that the reflex movements are moderated by still higher centers in man at least. The long routes are indispensable to the production of the reflexes in man as is shown by their complete disappearance after section of the cervico-dorsal cord. On the other hand, destructive processes in the brain abolish or attenuate the cutaneous while they exaggerate the tendon reflexes. Destruction of the motor cortex induces exaggeration of the tendon reflexes in all animals and this is also induced in man and higher animals by a destructive process in the cerebellum. Consequently, it seems evident that in the human adult the cutaneous reflexes have their centers in the cerebral cortex and the tendon reflexes in the mesocephalon. The short routes become atrophied as the child grows to maturity, but they always suffice for very rapid defensive actions induced by a violent stimulus. Weaker impressions (cutaneous reflexes) traverse by preference the long routes. The tendon reflexes are exaggerated when the cerebral or cerebellar inhibiting action is weakened or abolished, either from irritation of the pyramidal tract or the basilar cells, as in organic hemiplegia and pareto-spasmodic conditions, or from irritation of the peripheral neuron as in case of sclerosis or compression of the spinal cord. Exaggeration of the cutaneous reflexes is due to individual peculiarities and various intoxications, and not to organic lesions of the nerve routes. Diminution or abolition of both the tendon and cutaneous reflexes follows the alteration or functional disturbance of the cells or fibers engaged in their production. The relations between the condition of the sensibility and that of the cutaneous reflexes are very close. The parallelism is constant in organic affections. The antagonism between the tendon and cutaneous reflexes frequently noted in organic affections and even in supposed health, is another argument in favor of their different localization. The toe reflex should not be considered a true cutaneous reflex, as it may persist after the cord has been severed. In lesions of the tissues surrounding the cylinder-axes of the pyramidal tracts, the irritation of the fibers induces erethism of the basilar neurons presiding over the tendon reflexes, and exhaustion of the cortical neurons involved in the production of the cutaneous reflexes. Hence exaggeration of the former

and diminution of the latter. This also occurs after repeated stimulation of the reflexes; the cutaneous reflexes become weaker and weaker while the tendon reflexes become more and more exaggerated. Contracture is an exaggeration of the muscle tonus and may be due to inhibition of the antagonist muscle, or to a lesion of the tissues surrounding the central or peripheral motor neurons. There is no essential difference between the contracture in convulsions and that of hemiplegia, but in the pseudo-contracture of hemiplegia, with retraction of the tendons, there is evidently some alteration of the peripheral motor neuron with interference with its trophic function. Muscular hypertonicity does not necessarily coincide with exaggerated tendon reflexes—another argument in favor of their anatomic independence. The amount of contracture is usually proportional to the vigor of the muscle. Although some disturbance in the central or peripheral motor neurons is the principal, if not the only cause of contracture, yet there is considerable difference between the contracture due to each.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Removal of Lanugo and Hairs.

A subscriber asks for a safe method (not electrolysis) of permanently removing superfluous hair, especially lanugo of the upper lip of girls.

There is no method of permanently removing hairs other than by electrolysis. This should not be attempted in such cases as mentioned above. A growth of coarse hair will recur even after electrolysis.

Treatment of Pertussis.

Just at this time of year pertussis seems to be very prevalent in some localities. This time in the year is certainly favorable to the prognosis of the disease. The little patients can be kept in the open air, and not housed in close rooms, which lessens the number of paroxysmal attacks of coughing as well as the severity of the attacks. The medicinal treatment is divided into the antiseptic, the anti-catarrhal and the sedative treatment.

Yeo is convinced that carbolic acid inhalations is of great value in the antiseptic treatment of this disease. He places the child in a small room containing an open fire-place; a large iron spoon should be made hot from time to time and carbolic acid vaporized by putting a teaspoonful or two into the heated spoon. The atmosphere should be so strongly impregnated with this vapor, according to Yeo, as to make the atmosphere unpleasant to others. These fumes should be kept up night and day. As a spray for direct inhalation he recommends the following:

℞ Acidi carbol. 3i 4
Glycerini 3i 4
Sodii bicarb. ..... gr. x 66
Aq. destil ..... ʒi 32

M. Sig.: Use as a spray in front of the mouth of the infant constantly, so that he is compelled to inhale it.

The urine should be under constant observation during above treatment and if any discoloration occurs the treatment should be suspended for twenty-four hours.

FOR THE PAROXYSMS.

The following combination is recommended to lessen the severity of the paroxysm and to render the expectoration less tenacious:

℞ Sodii benzoatis ..... gr. lxxii 5
Sodii bicarb. ..... gr. xlviii 3 20
Ammonii chloridi ..... gr. xxiv 1 66
Aquæ chloroformi ..... ʒi 32
Aquæ anisi, q. s. ad ..... ʒiii 96

M. ft. mistura. Sig.: One to four teaspoonfuls according to the age of the child, in a little hot milk, every four hours.

Bamberger recommends the following the moment the attack comes on.

℞ Sodii bicarb.
Sacchari, āā 3ii 8

M. Sig.: Dissolve a small amount of the powder in hot water and give to the patient as the paroxysm of coughing comes on.

Dujordin-Beaumetz recommends the triple bromids for relief of the paroxysm as follows:

℞ Ammon. brom.
Sodii brom.
Potassii brom. āā 3ss 2
Syr. chloralis ..... ʒi 32
Aquæ, q. s. ad ..... ʒiv 128

M. Sig.: One teaspoonful or more according to age, in milk night and morning.

Roth recommends the following:

℞ Acidi carbol. ..... gr. xv 1
Spts. vini rectif. ..... m. xv 1
Tinct. iodi ..... m. x 66
Tinct. belladonnæ ..... m. xxx 2
Syr. papaveris ..... ʒiiss 10
Aq. menth. pip. q. s. ad ..... ʒii 64

M. Sig.: One teaspoonful every two hours for a child between one and two years of age; half the quantity diluted with water for infants under one year of age.

HEROIN IN WHOOPING COUGH.

Dr. H. H. Haralson, of Vicksburg, Miss., recommends the administration of heroin, beginning early in the attack and continuing it through the catarrhal and paroxysmal stage. During the last stage he recommends tonics, good nourishment and proper hygienic surroundings. The following combination is employed by him:

℞ Heroin hydrochlor. ..... gr. ¼ to ½ 015-03
Tinct. belladonnæ ..... ʒi 4
Spts. frumenti ..... ʒi 32
Syrupi simplicis, q. s. ad ..... ʒiv 128

M. Sig.: One teaspoonful every five or six hours.

Dr. Haralson seems to be very enthusiastic over his success in ameliorating the paroxysm and lengthening the time between the paroxysms as well as cutting short the duration of the disease.

TREATMENT OF WHOOPING COUGH BY IRRIGATION OF THE NARES.

W. Lattey, according to *British Medical Journal*, states that the irrigation of the nares in pertussis should be more frequently employed. The child should be rolled up in a shawl with the arms confined, and placed face downward across the nurse's lap. Tepid water should first be used with a soft india rubber tube attached to the syringe. This should be followed by some antiseptic solution. The same treatment should be carried out with both sides.

Treatment of Erysipelas.

J. Hays, in *Jour. de Méd. de Paris*, recommends the following as a lotion in the treatment of erysipelas:

℞ Acidi carbol.
Tinct. iodi
Alcoholis, āā 3ss 2
Olei terebinthinæ ..... ʒi 4
Glycerini ..... ʒiss 6

M. Sig.: For external application.

Every two hours the erysipelatous part may be painted with this liquid as well as a small zone of the surrounding healthy tissues, and the whole covered with aseptic gauze.

A Sedative in Tubercular Meningitis.

The *New York Med. Jour.* recommends the following, as advised by Malba, to combat the agitation, the cries and convulsions in tubercular meningitis.

℞ Strontii bromidi ..... gr. xv 1
Chloralis hydratis ..... gr. viiss 5
Syr. Valerianæ ..... ʒv 20
Syr. menthæ ..... ʒii 64

M. Sig.: One teaspoonful every half hour until quiet is obtained.

Intestinal Tuberculosis in Infants.

The following is noted in *New York Med. Jour.*:

℞ Argenti nitratis .....gr. ii | 12
Pulv. amyli |
Pulv. altheæ, āā .....gr. v | 33

M. ft. pil. No. xv. Sig.: One pill to be taken daily for three consecutive days after the administration of a light saline aperient.

If the diarrhea does not stop, the dose should be raised to two or even three pills daily during two consecutive days. This treatment is suitable for children ranging in age from 5 to 10 years.

For young infants the following is recommended:

℞ Argenti nitratis .....gr. 1/6 | 01
Syrupi idei .....ʒiss 48 |
Aq. destil. q. s. ad.....ʒiii 96 |

M. Sig.: From a dessertspoonful to the entire draught according to age once or twice daily.

Absorption of Drugs by the Bladder.

Barbiana, according to the *Ther. Gaz.*, has found by experimental research that dilute solutions of various drugs, with the exception of iodin, are never absorbed by the bladder at first irrigation, but that if consecutive irrigations are made there is fairly active absorption. This he attributes to certain functional disturbances of the epithelium incident to the mechanical action of the lavage upon the vesical walls, since such absorption may take place without further alteration of this epithelium. He believes that the complete retention is in itself sufficient to produce such changes in the vesicular wall as are calculated to encourage absorption.

Salivation Following Ether Narcosis.

The salivation in ether anesthesia is usually excessive and very often is a factor in the cause of bronchitis and pneumonia following its employment.

Dr. W. Reinhard, as stated in *Merck's Archives*, recommends the following as a preventive:

℞ Atropinæ sulphatis .....gr. 1/6 | 01
Morphinæ hydrochloratis .....gr. iii | 20
Aq. destil. q. s. ad.....ʒiiss 10 |

M. Sig.: Inject from eight to sixteen drops, according to the condition of the patient.

Treatment of Umbilical Hernia.

The *Med. Record* makes a note of the treatment of umbilical hernia according to the method of J. C. Hubbard, by means of adhesive plaster strapping. He states that the younger the child the earlier the cure is to be expected. The failure of cure and the danger of recurrence are slight. The author reports 28 cures out of 60 cases.

Pelletierin Tannate in Tapeworm.

The following combination containing pelletierin tannate has been used with almost uniform success in treatment of tapeworm, but it disturbs the stomachs of some patients:

℞ Oleores. aspidii .....ʒiv 16 |
Olei terebinthinæ .....ʒii 8 |
Pelletierin tannatis .....ʒi 4 |
Spts. chloroformi .....ʒi 4 |

M. Sig.: Shake well. One teaspoonful in the morning on an empty stomach followed in about two hours by a saline cathartic.

Treatment of Tabes Dorsalis.

Collins, in *New York Med. Rec.*, summarizes the treatment as follows: 1. The determination as to whether antispecific treatment shall be employed. 2. The utilization of electricity, hydrotherapy, massage and counterirritation. 3. The education of the ataxic members, the rehabilitation of purposeful movements. 4. The relief of subjective symptoms, such as pain, crises, dereliction of bladder function, ocular paralyses, amaurosis and trophic disturbances. 5. Adopt a plan of treatment and carry it through.

It might be added in addition to Dr. Collins' statements that the value of antispecific treatment is questionable unless the symptoms of tabes come on comparatively early after the infection. In other words, if tabetic symptoms do not make their appearance earlier than five years or if the syphilis in its active stage has received strong treatment the employment of mercury and the iodids is usually productive of harm. On the other hand, too much stress can not be placed upon the value of exercise to re-establish co-ordination after Fraenkel's methods, while inactivity and disuse greatly decrease muscular control as well as discourage the patient.

Medicolegal.

Basis of Recovery for Services as Health Officer.—The Court of Appeals of Kentucky holds, in Henderson County vs. Dixon, that where an action is brought for the recovery of compensation for services alleged to have been rendered as health officer, and the appointment of the claimant is traversed by the answer to his petition, it is incumbent upon him to prove the organization of the county board of health, and also his appointment to the position claimed by him. It is further of the opinion, too, that such appointment should be proven by the records of the county board, or some reason given for the introduction of oral testimony. Again, when the appointment is denied, it holds that it is a question of fact for the jury to find that the claimant was duly appointed, before it can, in any event, allow him any compensation. Then, complaint was made in this case of the admission of testimony, in this: that the witnesses, in fixing a reasonable compensation, were permitted to base their opinion as to the value of services upon the standing of the claimant as a physician. But the court holds that it was competent to show that he was a physician of good standing and of long practice, and that the jury might take such facts into consideration in determining the value of his services, though the criterion of recovery, if entitled to recover at all, was reasonable compensation.

License a "Right"—Validity of Act as to Revoking.—The license to practice medicine which one receives, the Court of Appeals of Kentucky declares, in Matthews vs. Murphy, is certainly a "right" or "estate." Then it takes up the question of whether a person having fitted himself for this learned profession, and having been licensed to practice the same, the state board of health has the right to charge him with "unprofessional conduct likely to deceive or defraud the public," and erect a standard by which that conduct is to be measured, and if in its judgment he does not meet its requirements summarily deprive him of a right or estate or both. Referring to the Kentucky statute bearing on the subject, one section of which provides that the board may refuse to issue a certificate to practice medicine to any individual guilty of grossly unprofessional conduct of a character likely to deceive or defraud the public; and it may, after due notice and hearing, revoke such certificates for like cause, the court remarks that the statute does not prescribe the manner by which a physician may regulate his conduct. It does not advise him in advance what act or acts may be in violation of its provisions. He is not told what is lawful or unlawful. He might do an act which he regarded as entirely proper, which neither violated moral law or involved turpitude, still such acts might, in the opinion of the state board of health, amount to unprofessional conduct, and which in its opinion did or was calculated to deceive or defraud the public. The physician who did the act of which complaint was made before the state board of health could not know at the time the act was done what standard would be thereafter erected by the board by which its effect was to be determined. As the statute does not advise him beforehand as to what is unprofessional conduct, he could not knowingly or intentionally be guilty of it. In other words, the legislature, in effect, has attempted to commit to the state board of health the right, after the physician has done some act, to determine what its effect is to be, and if, in its judgment, he should be deprived of the right to practice his profession, it can inflict the punishment upon him by revoking his license. Besides, what the present state board of health

might consider unprofessional conduct might be adjudged by another board not to be. For such reasons, the court does not think the Kentucky statute is valid in so far as it attempts to confer upon the state board of health the right to revoke a license which has been granted by it to a physician to practice his profession. This conclusion, however, applies alone to so much of the statute as authorizes the board to revoke a physician's license to practice medicine for unprofessional conduct. That part of the statute which authorizes the board to pass upon the qualifications of persons to practice medicine and to license them, the court says, is valid, though if the board should exercise that power either arbitrarily or capriciously, the party injured may obtain relief in the courts. It also says that if the legislature desires to declare for what acts or conduct a physician's license to practice medicine shall be revoked, it is competent to do so, and to vest in some tribunal the authority to investigate and try the charge which may be made under such a statute.

Medical Books—Reputation for Skill as Abortionist.—The rule in Kentucky, as it is at common law, the Court of Appeals of Kentucky says, in Clark vs. Commonwealth, is that books on scientific subjects are not admissible to prove the facts treated of in them. But that is not saying that such books, or, more particularly, medical books, may not be read to the jury for any purpose, otherwise, as the court suggests, an ignoramus in a profession might, by an assertion of learning, declare the most absurd theories to be the teachings of the science of which he is a professed expert, and, when pressed upon cross-examination as to either his own experience or the basis of his learning, would be enabled to hide behind the formidable name of some standard author, and thus foist upon the jury a most hurtful falsehood as a scientific deduction, asserted by the most eminent in the profession, solemnly declared and promulgated by him for the guidance of his brethren and the service of mankind. Therefore, in a case where such a witness (as for example, a physician) makes such an attempt, it is just and reasonable, the court holds, that the opposite side should be permitted to test the truthfulness of his statement, and expose his ignorance or mendacity by either compelling him to admit upon an inspection of the authority that it does not sustain his views, or by reading the authority to the jury to prove that it does not, and that the witness, either through ignorance or base motive, has falsely deposed. Then, the testimony of all the medical witnesses in this case being that certain lacerations indicated that they were made by a bungler, the court holds that it was competent for the prosecution to show, if it could show, by those personally acquainted with the skill of the accused as a surgeon and physician, that they knew him to be unskilful. But it was not competent for the commonwealth to prove the extent of his skill as a surgeon or physician by hearsay or reputation. And when the commonwealth introduces evidence attacking the professional ability or skill of a defendant, it necessarily follows that he should be permitted to prove affirmatively that he is a skilled surgeon, and this he may do, if he can, by those acquainted with his skill; and certainly those who have been his patients, and have had the very best opportunity of judging of that skill, should be permitted to testify. What his reputation is can not be proved for him any more than it can be against him, the question being as to what is the fact as to his being skilful. Evidence having been suffered to go to the jury from which it would appear that the accused was a professional or habitual abortionist, the court says that if it was shown or admitted that he had committed the abortion charged in this case, but attempted to justify it upon the ground of necessity, it is clear that the evidence would have been competent to prove his motive and intent, and to rebut or negative the idea that he was acting upon his professional judgment, and under a necessity of saving the life of the mother. On the other hand, as the purpose and effect of the evidence in this case was not so much to show intent or motive, as it was to establish primarily the guilt of the accused as to having perpetrated the act of abortion, in the opinion of the majority of the court the admission of this evidence was error, and it should have been rejected.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), August 24.

1 *An Ideal Colony for Epileptics, and the Necessity for the Broader Treatment of Epilepsy. William P. Spratling.
2 Cerebral Concussion, with Retinal Changes. L. A. W. Alleman.
3 *Indications For and Against Total Removal of the Human Stomach. George Childs-MacDonald.
4 *The Outlook of the Medical Man To-day. John Milton Dodson.
5 *Statistical Note Concerning the Contagiousness of Tuberculosis Pulmonalis. E. L. Shurly.
6 *Carcinoma of the Breast. Carl V. Vischer.
7 *Peculiar Nervous and Urinary Manifestations Following La Grippe in the Aged. O. P. Kernodle.

Medical Record (N. Y.), August 24.

8 *The Prognosis of Traumatic Hysteria, Based upon the Subsequent Histories of a Number of Litigated Cases. Pearce Bailey.
9 *Infantile Typhoid Fever. August A. Strasser.
10 A Series of Mastoid Operations. Charles H. May.
11 *The Zoological Distribution of Tuberculosis. Woods Hutchinson.
12 *Bifocal Lenses; What Area Shall Be Devoted to the Short Focus. John E. Weeks.

New York Medical Journal, August 24.

13 *A Case of Actinomycosis Hominis, with Remarks Concerning the Differential Macroscopic Diagnosis Between Actinomycotic and Tuberculous Peribronchitis. Gustav Fuetterer.
14 Remarks upon the Treatment of Hip Disease, and Presentation of a Further Modification of the Hip Splint. John Dane.
15 *The Treatment of Acute Hip Disease, with Description of a Splint. Robert W. Lovett.
16 A Case of Angeio-Sarcoma of the Nose. Stanley S. Cornell.
17 *The Importance of an Early and Radical Climatic Change in the Cure of Pulmonary Tuberculosis. C. F. Gardiner.
18 Sulphuric Ether in the Removal of Ceruminous Plugs. E. L. Meierhof.

Medical News (N. Y.), August 24.

19 *Further Notes upon the Diagnostic Test of Tuberculin. Edward O. Otis.
20 *A Study of Burns, with a Plea for Their More Rational Treatment. Frederic Griffith.
21 *Carbolic Acid in Burns. Otto L. Muench.
22 *Inertness of Petroleum Compounds When Given Medicinally. Robert Reyburn.
23 Strangulated Hernia of the Bladder; Ruptured Sarcoma of the Testis Mistaken for Strangulated Hernia. Thomas H. Manley.

Boston Medical and Surgical Journal, August 22.

24 *Treatment of Delirium Tremens. J. Frank Perry.
25 *On the Effect of Alcohol. H. G. Beyer.
26 *The Management of Delirium Tremens, with the Report of a Case. V. A. Ellsworth.
27 *Myomectomies for Fibroids During the Child-Bearing Period. W. H. Baker.

Philadelphia Medical Journal, August 24.

28 Slow Pulse, with Special Reference to Stokes-Adams Disease. (Continued.) Robert T. Edes.
29 *The Intimate Action of the Silver Nitrate Injections in the Treatment of Phthisis. Thomas J. Mays.
30 Pelosis Rheumatica. T. Avery Rogers.
31 Is the Central Fissure Duplicated in the Brain of Carlo Giacomini, Anatomist? Edward A. Spitzka.
32 The Foundations of Faith in Medicine. A. W. Crane.

St. Louis Medical Review, August 24.

33 Report of Two Cases of Pregnancy Requiring Operation. 1. Fibromyomata Complicating Pregnancy. 2. Extra-uterine Pregnancy. H. S. Crossen.
34 Foreign Bodies in the Lungs. Theodore Potter.

Cincinnati Lancet-Clinic, August 24.

35 The Prognosis of Apoplexy. Charles J. Aldrich.
36 *Is Water Necessary for the Cleansing of Floors? W. O. Owen.

Northwestern Lancet (Minneapolis), August 15.

37 A Case of Rhinoplasty, with Use of a Buried Metal Support. J. Clark Stewart.
38 The Essentials for the True Dignity of the Medical Profession. F. E. Bissell.
39 Smallpox in Minnesota. Theo. L. Hatch.

Annals of Surgery (Philadelphia), August.

40 *Intraperitoneal Rupture of the Bladder Treated by Laparotomy and Suture. Samuel Alexander.
41 *Strangulation of the Testis by Torsion of the Cord. Charles L. Scudder.

42 *Fracture of the Carpal End of the Radius, with Fissure or Fracture of the Lower End of the Ulna, and Other Associated Injuries. Carl Beck.
43 *An Operation for Saddle Nose. Fred Walker Gwyer.
44 *The Artificial Production of Connective Tissue by Means of Injection of Agar-Agar. Simon Pendleton Kramer.
45 *An Operation for the Radical Cure of Umbilical Hernia. William J. Mayo.
46 Sarcoma of the Wall of the Thorax. Charles B. Porter.
47 Congenital Anterior Dislocation of the Tibia Treated by Arthrotomy. John B. Roberts.
48 Cancrum Oris Successfully Treated by Excision and the Cautery. A. Z. C. Cressy.
49 Forward Dislocation of the Semilunar Bone. Percival R. Bolton.

Medical Times and Register (Philadelphia), August.

50 Motor Insufficiency of the Stomach. S. C. Norris.
51 *The Ambulatory Treatment of Fractures. Frederick Rustin.

Peoria Medical Journal, August.

52 Neurasthenic Asthma. Charles H. Brobst.
53 Legal Responsibility for Burns. O. B. Will.

Journal of Nervous and Mental Diseases (Nyack, N, Y.), August.

54 A Case of Peripheral Pseudo-Tabes with Exaggerated Reflexes. Autopsy and Microscopical Examinations, Showing Degeneration of the Peripheral Nerves and No Lesions of the Spinal Cord. Charles K. Mills.
55 *A Study of Insanities of Adolescence. Wm. Pickett.
56 A Large Subcortical Tumor of the Occipital Lobe, Producing Right-Sided Hemiparesis and Right Homonymous Hemianopsia Together with Wernicke's Pupillary Inaction Sign as a Distance Symptom. F. X. Dercum.
57 A Case of Astereognosis Resulting from Injury of the Brain in the Superior Parietal Region. William H. Teller and F. X. Dercum.

St. Louis Medical and Surgical Journal, September.

58 Report of Three Cases of Malignant Endocarditis: One Following Measles, Another Typhoid Fever in a Child and Simulating Splenic Lymphatic Leukemia, and Another Terminating in Recovery. Albert E. Roussel.
59 A New Bed Spring Especially Adapted to Hospital and Sick-room Purposes. A. Habermaas.
60 Asthma. Wm. Henry.
61 Comparative Treatment of Gonorrhea. L. Midy.
62 No Thieves in Germany—A Piece of International Medical History. Albert S. Ashmead.

Medical Mirror (St. Louis), July.

63 *Pulmonary Tuberculosis. H. Edwin Lewis.
64 *The Management of Fevers. I. N. Love.
65 A Remarkable American—Dr. William Pepper. Francis Newton Thorpe.

Journal of Eye, Ear and Throat Diseases (Baltimore), July-August.

66 Four Cases of Metallic Foreign Body in the Eyeball: One Case Ending Fatally; One Case with Wound of Lens Not Causing Traumatic Cataract, and Recovering with Perfect Vision. E. C. Ellett.

Medical Sentinel (Portland, Ore.), August.

67 *Division of the Fee. Robert L. Gillespie.
68 *Ophthalmia Neonatorum, Its Prevention and Treatment. Adolph Blitz.

Alabama Medical Journal (Birmingham), August.

69 Man's Predominant Passion—Sexual Instinct and Its Control. R. C. Bankston.
70 Spleno-Medullary Leukemia, with a Case. Edgar Allen Jones.
71 Cholera Infantum. J. C. Johnson.

American Medical Compend (Toledo, Ohio), August.

72 *Some Experiments in Pneumectomy. J. H. Jacobson.
73 The Life and Work of Louis Pasteur. A. D. Hobart.
74 Therapy of Protonuclein. C. S. Miller.
75 The Myometrium, Its Etiology and Physiology. (Continued.) Byron Robinson.

Canadian Practitioner and Review (Toronto), August.

76 *The Surgical Aspect of Gastric Ulcer. Henry Howitt.
77 Excision of the Upper Jaw for Sarcoma, with Presentation of the Patient and Specimen. Herbert A. Bruce.

New Yorker Medicinische Monatsschrift (N. Y.), August.

78 Ueber Luetischen Primaeraffect der Nase. W. Freudenthal.
79 Gynaecologische Krankheitsbilder von Allgemeininteresse. F. Foerster.

Medical Examiner and Practitioner (N. Y.), August.

80 *The Relation of Bodily Mutilations to Longevity. John Homans.
81 Arterial Hypertonus and Arteriosclerosis: Their Relations and Significance. William Russell.
82 The Pulse. Dr. Mahillon.
83 Examinations for Life Assurance. W. H. Pepler.
84 Two Infrequent Causes for Rejection: Renal Stone and Renal Tuberculosis. Henry Jacobson.

Post-Graduate (N. Y.), August.

85 *Indications for Operation on the Mastoid Bone. Wendell C. Phillips.
86 Congenital Malformations of the Rectum and Anus. Samuel G. Gant.
87 Chart of Work Done by the Lying-in Department of the New York Post-Graduate Hospital. Robert H. Halsey.
88 Mastoid Cases. Dr. Roosa.
89 Notes from the Clinics. Dr. Caille.

AMERICAN.

1. **Epileptic Colonies.**—The conditions for an ideal epileptic colony are discussed by Spratling, who insists on the importance of good water supply, drainage, etc. As regards location, he objects to too easy accessibility by outsiders, but still would wish to be in reasonable proximity to the centers of population from which the patients are received so as to have the advantages in obtaining supplies. He dwells on the importance of attractive landscape gardening and the value of the colony plan rather than large buildings containing great numbers of patients, and mentions the following requisites for colonization: 1. An administration building; 2, hospital building, complete and modern for the treatment of medical and surgical cases and having attached to it wings for receiving recent admissions. 3. Industrial buildings for educational and other purposes, proper farm equipment and a number of patient's cottages which he divides into three classes: 1. Those holding from 12 to 16 or 18 patients. 2. Those large enough to accommodate from 25 to 35, the most numerous class. 3. Infirmaries combining home and hospital for the use of perpetually bedridden and infirm patients. Homes for the employees should also be provided. The resident officers should include a medical superintendent, appointed by the managers, four or five assistant physicians, medical internes, pathologist, etc., these all appointed by the superintendent. The ratio of medical officers, not including the pathologist, should be one to every 100 patients. Other officers, such as steward, chaplain, matron, etc., should also be appointed by the superintendent and a training school for nurses should be an important feature of the institution.

3. **Gastrectomy.**—The advisability of complete excision of the stomach is treated of by Childs-MacDonald under the following heads: 1. The diagnosis and age. He would limit the operation to 55 in men and 60 in women, though this must not be absolutely the rule, as individuals differ. 2. The state of the blood. A high percentage of white cells means an unfavorable prognosis. 3. The absolute integrity of the heart, nervous, muscular and valvular, must be considered. A weak diffused pulse, arteries insufficiently filled, plus loss of tone, cardiac dilatation, organic valvular lesions, marked hypertrophy and muscular insufficiency, evidence of previous heart strain, atheroma, delirium cordis, irritability, all should prohibit operation. The heart should be in the best possible condition, or the patient's life may be lost by cardiac failure or shock. Other things being equal, workingmen and women furnish a more favorable prognosis than those who follow a sedentary or idle life. Total abstainers are favorable, while over-indulgence in liquor is a positive bar; even moderate beer drinkers are not good subjects. We must be sure there is gastric cancer and its location. The most favorable indications are a moderately dilated viscus with freely movable tumor situated to the right of the median line. A contracted or very dilated stomach, with a fixed or non-palpable tumor, or one located on a line extending from the center of the epigastrium to the anterior superior spine of the ilium on the left are decidedly unfavorable. Adhesions may be expected with all their complications, or disease may arise external to the stomach. If we have any grounds for suspecting that the disease has implicated the cardia, we should on no account attempt any operative procedure except to establish an opening between the stomach, jejunum or duodenum and skin, through which the patient may be fed. Twelve or fourteen months previous disease contra-indicates operation, while metastasis is an absolute bar. 6. The preparation of the patient should include absolute rest in bed for four or six days or more, with attention to excretions. Lavage of the stomach once in twenty-four hours, preferably at night, with some mild antiseptic, will relieve pain and lessen the catarrh. The patient

should be frequently and judiciously fed, to the capacity of his powers of assimilation, with peptonized milk, broths and gruels, both by mouth and rectum. The mind must be kept quiet and the patient amused. The liver and bowels should be kept active with small and repeated doses of podophyllin resin, in combination with similar doses of calomel followed by salines. The skin should also be treated with warm baths with soft green soap dissolved in alcohol. In addition to the food mentioned he gives 3 ounces of beef tea made by the cold and hydrochloric acid process. Food should be given every two hours during the day and twice during the night. Alcohol in the form of old pure brandy, well diluted, should be administered to the amount of 4 ounces in twenty-four hours at regular intervals; it strengthens the heart and retards waste. For the final two days he prescribes 1/100 of a grain of digitalin three times a day. The stomach should be well washed and a rectal injection given on the morning of the operation.

4. **The Outlook of the Medical Man To-Day.**—Dodson points out that only a moderate income can be expected as a rule from medical practice as compared with other successful occupations. He advises the physician to gain general culture outside of his own profession, not to neglect his social and political duties, but especially to remember that besides the care and study of his patients the largest hope lies along scientific lines. He points out that certain physicians have, under conditions that were not particularly favorable, done highly scientific and extensive work. For instance, there are physicians in small towns who conduct surgical clinics with success. Industry, honesty and a love of truth are essential.

5. **The Contagiousness of Tuberculosis.**—Shurly analyzes 130 cases observed during the year 1898 and finds that of these there were 9 doubtful cases. Of the remaining 121 there is a possibility of 9 only having originated through ordinary natural communicability; while on further analysis there is a possibility that only 5 so originated, and further, that of the whole number, 130, at least 112 were immediately preceded by some acute or subacute disease. The tendency of his paper is to minimize the importance of case-to-case contagion in consumption.

6. **Carcinoma of the Breast.**—In this condition the question of successful operation depends so much on its early performance that diagnosis becomes only secondary to treatment. Vischer finds that 80 per cent. of breast tumors were of this nature, while of the remainder 4 per cent. were sarcomas and the balance such as frequently undergo malignant change. He divides the breast for clinical purposes into four quadrants by two lines passing at right angles with the nipple. It is found that carcinoma is most frequent in the upper outer, and next in the lower outer quadrant. Sarcoma, a much rarer growth, is found most commonly in the inner upper segment. Retraction of the nipples is found comparatively seldom, and only where connective tissue enters largely into the formation. The form beginning with adenoma, gradually assuming epithelial change, is rather common, and is found in young women. The medullary form is most rapid in growth and shows an early tendency towards breaking down. Nodulation is significant of connective tissue hyperplasia and is of less importance than the mobility of the growth and its anatomic situation. The prime object of this paper is to attract attention to the early recognition of the condition. He suggests careful observation of any breast that has ever been the seat of inflammation. Attention is not apt to be called to this condition as subjective symptoms are few in the early stages. Of the 56 cases of removal occurring in private practice, of which he had a complete record, only about two-thirds have recovered. In multiparas, past the age of lactation, it would be far safer to remove all breasts which are the seat of tumors. In breasts that have had abscesses, any enlargement should be sufficient cause for removal.

7. **Influenza.**—Three cases are reported by Kernodle of la grippe in old people, showing peculiar nervous and urinary manifestations. Summarizing these he thinks that aged persons suffer more violently from la grippe than those in youth and vigor; the manifestations are more marked and profound in the aged, and never entirely disappear; nephritis and urinary disturbances are more pronounced and lasting, and there is a more decided tendency to recurrence, resulting in death; owing to the worn-out and deteriorated physical condition and lowered nerve resistance the results are more grave, the assaults more violent and profound and the death rate much higher in persons over 50 years.

8. **Traumatic Hysteria.**—Hysteria is a misunderstood condition, being a mental disease with physical manifestations. Bailey reports a number of cases illustrating this point. He thinks there is uncertainty regarding the prognosis in this as in all other mental affections. The patient may recover or may be a sufferer for years. Of the indications which enable us to make the prognosis, he mentions first heredity, but believes that it is very difficult to substantiate the teachings of Charcot that hysteria never develops except in degeneracy. Age is an important matter, and he believes that in healthy persons not over 35 or 40 years of age the chances of recovery are good, though not certain, but that, with increasing age, the chances become less. He thinks that immediately after an accident, if the patient could be isolated and cared for by a physician who understood the significance of the symptoms and the best way of treating them, we would have very little persisting traumatic hysteria. Such ideal conditions, however, are rarely possible, and sympathy, indulgence and suggestion may render the disease hopeless.

9. **Infantile Typhoid.**—Strasser has found in the majority of his own cases symptoms of typhoid infection at the end of the second week. The cases run about as follows: Few prodromata; incubation not noticeable; headache not severe in infants, though it may be intense in older children; both are liable to initial convulsions. The fever is usually the cause of anxiety and the call for the doctor. It runs a wide range, and is usually more or less rapid, though conforming somewhat to a fairly typical typhoid curve. The state of the bowels is of no diagnostic value. Bronchitis is common, remaining long in the congestive stage. Epistaxis may be quite frequent; the tongue is not characteristic; rose spots occur as in adults; there may be some suppression of urine and splenic enlargement is frequent, according to some authorities. The main symptom is subacute bronchial inflammation due to the excretion of the Eberth bacillus from the bronchi and this in children amounts to the main disease for the first few weeks. He reviews Jacobi's statement of the dangers of typhoid in children, and agrees with Noyes that, in spite of these, convalescence is more rapid than in the adult, the mortality is less and abortive cases are more frequent. The prime requisite in the treatment is an intelligent nurse. When the temperature reaches 102.5 or 103 F. and there is great irritability, threatening convulsions, and severe headache, it is time for the cold bath and pack. As regards antipyretics, he does not favor them. As to other medication, salol is good; in diarrhea the various bismuth preparations are best. If constipation is the feature, calomel is the best antiseptic. When there is perforation or even slight hemorrhage, turpentine is the internal sheet anchor, and for very distressing meteorism, it is very comforting in the form of stupes or enemata. Rest in bed, the use of fluid food, etc., are not necessary to mention. He warns against the use of ergot preparations for hypodermic injection. Convalescence should not be retarded, nor should solid or semi-solid food be withheld too long.

11. **Zoological Distribution of Tuberculosis.**—Hutchinson has studied for five years the mortality in the London Zoological Garden and finds an apparently greater susceptibility to tuberculosis among vegetarian animals and a much reduced susceptibility among meat eaters both in mammals and birds, though there are some serious exceptions to the apparent rule. The odd-toed ungulates among the vegetable-eaters have important resisting powers and seldom become infected. He finds the largest percentage of tuberculosis among the primates, and the lowest amongst the carnivora and marsupials. In birds the greatest percentage is among the gallinæ and the lowest among the raptores. The American monkeys which

take some animal food are much more free from tuberculosis than the old-world catarrhine form. As regards housing, he finds that the animals that can stay in better air are less affected. The carnivora seem in most cases to demand a higher degree of activity than the herbivora, and when from any cause this higher degree of vigor and dash has been acquired by herbivora, then immunity from tuberculosis follows. The conclusion to which this preliminary survey has led him is that the distribution of tubercle is a matter of vigor, endurance, and resisting power, rather than of race, food, or exposure to infection, and as these powers are usually higher in flesh eaters than in vegetable feeders, the former possess a marked relative immunity.

12. **Bifocal Lenses.**—Weeks discusses the disadvantages of these glasses and finds that after experiments with various devices, the best results can be obtained by the use of a paster of oval shape, which measures 10 mm. in its vertical and 15 mm. in its horizontal diameter, giving a field at the reading distance of approximately 7 in. in the horizontal, and 12.5 cm. (5 in.) in the vertical meridian. If the oval disc is placed 2 mm. above the lower edge of the distance lens it will permit of clear distance vision below, sufficient to enable the wearer to see the curb, descend stairs, etc., without trouble. It is sufficient to place the optical centers of the portion of the lens for reading at the center of the paster. The dispersion rays of light occasioned by the edge of the paster can be minimized by making the edge very thin. In his diagram he places the paster a little to the inner side of the center of the larger lens.

13. **Actinomycosis Hominis.**—The case reported by Fütterer is thoroughly studied, and he says in conclusion: That macroscopic diagnosis between actinomycosis and tuberculous peribronchitis is possible and not even difficult. In actinomycosis he finds small, sharply-defined, sulphur-yellow rings, with clear, round outlines, having little tendency to involve the lung substance. These rings show a decided tendency to grow toward the center of the lumen of the bronchus, which at last becomes entirely occluded. The color is important, for in tuberculosis this varies. Where there is caseation even, the yellow color has a more grayish tinge and is not uniform in quality. The tuberculous areas project above the surrounding tissues and have an uneven surface and irregular outline; there is not the same tendency to grow centrally and close up the lumen, but rather to spread peripherally and an early affection of the surrounding lung tissue is the rule. Tuberculous infection generally affects the apices first, but actinomycosis prefers the lower parts of the lungs.

15. **Hip-Joint Disease.**—The conclusions presented by Lovett are as follows: Cases of hip disease permitting not over 25 degrees of motion in flexion or extremely irritable cases should be treated by the best obtainable fixation plus traction. Treatment by recumbency is not generally necessary even in the most acute cases, if the apparatus described above is applied to the hip in the position of deformity. This deformity generally disappears under this treatment. The splint should be removed as seldom as possible, and the hip should not be disturbed by frequent examinations. Cases allowing 25 to 45 degrees of motion in flexion may be treated by Dane's splint with high shoe and crutches in preference to any other form of traction splint. Personally, he would extend the use of the spica traction apparatus to most of these cases in the hope of shortening the disease by over-efficient treatment, but that position could perhaps not be successfully defended. The use of the Davis-Sayre-Taylor long traction splint, with one or two perineal bands, should be limited to cases allowing well over 45 degrees of motion in flexion, and should be used with high shoe and crutches to prevent the intermittent traction necessarily incident to walking on the splint. It is probable that the more rational use of combined traction and fixation would lead to better results in conservative treatment in shortening the disease and improving the functional results than can be obtained by the routine use of traction.

17. **Climate in Tuberculosis.**—Gardner pleads for the importance of change of climate as a matter of treatment in tuberculosis. He claims that by change to a high, dry region, the organism undergoes formation of new cells, nutrition is stimulated, and isolation of tuberculous tissues is more rapid. In the winter the cold is more endurable and more beneficial than at lower altitudes, and the continuous sunlight is an effective germicide. The dryness of the air and the cool nights prevent exhaustion in the summer time. The electrical conditions are stimulating, The scenery has a physiologic value often overlooked. Climate comes in as such a factor that 15 per cent. better results can be obtained under home treatment of tuberculous cases in Colorado than in closed sanatoria in the East.

19. **Tuberculin.**—Otis has experimented with tuberculin as a diagnostic test in 36 cases of syphilis, or 35, throwing out one doubtful case. There were 6 undoubted reactions and 5 which he calls abortive reactions. Considering only the 6 we have 17 per cent. of reactions; including the abortive cases, we have 31 per cent. He does not find with Beck that one-half the cases of syphilis react to this test, but there does not seem to be any guide in the activity or quiescence of the disease as to whether or not the reaction is likely to occur. In his most violent reaction, in which the temperature went up to 104, the case was one of many years' duration and without active manifestations. He also examined 26 cases of suspected or proven tuberculosis, which gave some interesting and perplexing results. In 8 cases where the physical examination showed sufficient evidence of tubercle or where bacilli were found in the sputum, he had 4 reactions and 4 failures. In 3 cases where the tubercle bacilli were found in the sputum, 2 did not react. In one 7 milligrams were used and in the other 5 and 10. In the third case where 2, 5 and 8 milligrams were successfully used only a local reaction was obtained. He offers no explanation for such results. Of the remaining 18 cases of suspected tuberculosis there were 6 reactions and 12 failures. In none of the cases which failed to react could tuberculosis be more than suspected. A case of lupus of the face, besides giving a general reaction, showed a pretty local one. In using the tuberculin test for suspected tuberculosis, experience, he says, teaches us to look carefully for syphilis. He confesses that when he has a case of tuberculosis with tubercle bacilli in the sputum and failure to reaction, his confidence in the test is somewhat shaken, but it is well to bear in mind that there is always a chance of error and that we do not yet know what the minimum efficient dose is.

20. **Burns.**—Burns, according to Griffith, may be divided into two degrees of severity, the first class involving the skin only and the second including all others. The pathology of these is that of inflammation of the part locally affected. Early death and internal complications are due to direct action of heat, with fragmentation and vital change in the blood corpuscles. Later effects are due to infections taking place from the burned area. The granulations during the healing of burns are the determining factor in the amount of contraction and deformity. The greater the friction caused by irritation of any source, the larger the granulations, the greater the amount of connective tissue and the contraction. The local treatment from the earliest times has been along the lines of prevention of irritation, but the late advances in wound treatment have not been followed. The burned wound should be cleansed with the removal of as much burned, dead tissue as possible; the thoroughness with which this is done will determine the presence or absence of infection. Hydrogen dioxid to wash away the debris and render aseptic the denuded parts is the best antiseptic at our command. Rubber tissue in strips should be laid on the wound to prevent contact with absorbent dressing. The use of splints to secure relaxation and retention in obtaining rest for a burned part is of great importance, and is as much indicated in this form of injury as in fractures. The internal treatment is stimulative until reaction from shock has taken place, when it becomes supportive. Opium fills the indications for pain, internal inflammation, and diarrhea. The bowels and kidneys should be continually kept open, but enemas only should be employed.

Watchful attention must be given to early signs of internal complications of viscera.

21. **Carbolic Acid in Burns.**—Three cases are reported by Muench, one of his own experience and two others, in which pure carbolic acid was applied to burns, causing immediate cessation of pain with no subsequent swelling or inflammation. The corroded skin came off in a few days, leaving a new skin and causing absolutely no inconvenience or trouble, not even a scar or contraction of muscle. In one case the burn was very extensive, covering the entire head, face, neck and hands, and in this case he gave a hypodermic injection of morphin. The patient recovered without a single scar, although there was sloughing on the end of the nose and rim of the ears.

22. **Petroleum Compounds.**—Reyburn calls attention to the inertness of petrolatum when given internally. He says it passes unchanged through the intestinal tract and therefore is insoluble in the gastric juice and intestinal canal and can be recovered as a whole in the feces. Its usefulness as a remedy, therefore, must depend on its unirritating and demulcent properties.

24. **Delirium Tremens.**—Perry has no sovereign remedy for delirium tremens. He does not believe in the sudden withdrawal of alcohol in chronic habitués. It is his practice to put the patients on a liquid diet as nutritious as can be borne, a goodly quantity every two hours during the day. In mild cases he stops the alcohol at once; in severe ones it is seldom completely withdrawn before the fourth or fifth day. The quantity, however, is lessened and as substitutes he uses ammonia, camphor, hyoscyamus, valerian, capsicum, ginger, etc. The heart must be supported by strychnin, nitroglycerin, etc., and small doses of opium may be employed. He thinks chloral hydrate, alone or combined with potassium bromid, one of the best things there is in some conditions of insomnia. He has employed hyoscin hydrobromate, though this is not a safe remedy. A better agent is musk, but its high cost is prohibitive in many cases; apomorphia properly used is safe, but is usually pushed too far, as has been the case in the drink cures. Morphin is not constant in its action; in most cases it is quieting, but seldom efficient alone. When the patient goes to sleep he must not be disturbed, though the sleep may last fourteen or fifteen hours. The attendant should be fearless and humor the patients in a practical way. Some patients, however, are extremely obstinate, and may require restraint, though only as a last resort. Lying on the back, a spread eagle is made of the unfortunate by towels and sheets. The patient will tug at his fastenings and be irritated, but is finally exhausted and possibly will fall asleep.

25. **The Effects of Alcohol.**—Beyer finds alcohol is primarily a stimulant, but a protoplasmic poison. He criticizes Dr. Woodruff's expressed ideas as to its value in the tropics. He has seen very little good from giving it in tropical climates, though in some cases for temporary purposes he has employed it in the engine and fire-room force—one ounce of whisky every twenty-four hours. The temperance movement generally has done much good, and he mentions an experiment of practical total abstinence in a recent Dutch expedition in the East Indies with extraordinarily good results.

26. **Delirium Tremens.**—Ellsworth differs from Perry in that he would cut off alcohol in every case, give milk and water abundantly and avoid hypnotics. In his experience with over 500 cases, he has never used restraint or allowed alcohol. He has had only two fatalities, and these patients were in a state of collapse when he received them. He attributes his success to the perfect freedom he allows the patients, that is, in not hampering their movements, in keeping the room thoroughly ventilated, giving good nourishment at short intervals, and the absolute prohibition of alcohol. He reports a case.

27. **Myomectomies.**—Baker reports a case of myomectomy, and in reviewing it makes the following suggestions: 1. The importance of performing myomectomies in preference to hysterectomies in most of the cases of fibroids during the child-bearing period. 2. Even though the patient and her friends may prefer a total hysterectomy for various reasons, principally among which are the facts of the extreme suffering of the patient or the great loss of blood, which make them desirous of absolutely putting an end to the menstrual process, it is generally better surgery to remove the cause of the suffering, and leave the uterus and ovaries in a state which may be of great future usefulness and certainly able to perform their normal functions. 3. The greater length of time necessary to perform several myomectomies in any given case is usually more than overbalanced by the complete insurance of the integrity of the organs involved.

29. **Intimate Action of Silver Nitrate.**—Mays bases his treatment on the theory that pulmonary tuberculosis is, in the majority of cases, primarily a neurosis in which the vagi participate and that the pulmonary disintegration is secondary. He believes direct stimulation of the vagi favorably influences the condition of the lungs. The mechanism of silver nitrate injections is of such a nature as to stimulate the vagi to a more vigorous action and in this way they create antagonism to disease that diffuses itself throughout the manifold ramifications of these nerves.

36. **The Cleansing of Floors.**—Owen recommends a finish on hospital floors of wax, linseed oil, turpentine, floor finish and benzine in the following proportion: Wax, 5 pounds; linseed oil and turpentine, 2 gallons each; floor finish (permanere), 1 gallon, and benzine, 10 gallons. This is applied once a week and laid on with a piece of cotton, brushed and polished with a cotton mop. He believes that too much floor scrubbing is responsible for some of the sickening odors which are due to decomposition taking place both in and on the floors. The danger of fire from the use of this material is very slight if only a small quantity is kept on hand to use at a time.

40. **Intraperitoneal Rupture of the Bladder.**—In case of intraperitoneal rupture of the bladder treated by laparotomy, it is evident, according to Alexander, that successful results in every case depend upon three things: 1. Surgical interference at the earliest possible moment after the accident. 2. Thorough cleansing of the peritoneal cavity. 3. Perfect closure of the bladder wound by sutures. The great object of the operation is to prevent peritonitis and septic infection, and he asks how can we prevent delay of operation in these cases and suggests that suprapubic incision, and exploration of the prevesical space is the best method. The injection and infiltration tests are liable to be misleading and are dangerous. Asepsis of the peritoneum can be best obtained by thorough flushing of the cavity with hot normal salt solution. For closure of the bladder wound he has used silk, that is, a layer of interrupted Lembert sutures and a second layer of crossed mattress sutures. The main point is not the suture material, provided it will not be too quickly absorbed, but the manner in which the suturing is done. He reports an operation and gives a tabulated statement of cases from the literature.

41. **Torsion Strangulation of the Testis.**—Scudder reviews the conditions and the literature of this disorder and finds that, in the majority of cases, its causes are rather mysterious, though slight trauma may produce it. He has found 31 cases in the literature and reports an additional one.

42. **Fracture of the Carpal End of the Radius.**—The different forms of possible fracture of the carpal end of the radius are discussed and illustrated both by diagrams and skiagraphs. The advantages of the Roentgen ray in this injury are recounted; they have thrown new light upon its possibilities. Beck concludes that in many cases of fracture of the carpal end of the radius producing so-called sideward pushing of the ulna, there is, in fact, a fissure or fracture of the ulna which was not recognized in former years, and this is seen only through a good skiagraph made with a good tube. The treatment of the different forms is described and the importance of perfect replacement insisted upon.

43. **Saddle Nose.**—The operation of Gwyer is described as follows: A longitudinal incision in the middle line at or near the root of the nose, depending on the amount of deformity

and carried downward towards the tip of the nose. At a point depending on the conditions existing, the line of incision divides into two lines separating more or less and coming together again below the tip, forming an ellipse. The skin included in the ellipse is removed. The skin is then dissected loose for a sufficient distance on either side, especially in the region of the deformity. A flap is next dissected out of subcutaneous tissue, and perhaps cartilage, starting at or below the tip and raising the flap as far as the lower end of the depression. The flap is made thicker in the middle than at the sides or ends and the thickest part placed in a position corresponding to the most depressed part. It is better not to carry the upper end of the incision too high, but having loosened the skin at that point, to tuck the free end of the flap under it. Such a course makes a smaller scar and union is prompter and firmer. After raising this flap, a portion of the cartilage lying on either side of the median line of the tip is removed, the amount depending on the spread of the nostrils. The suturing should be done with a small needle, preferably with horse-hair. The approximation should be very accurate and not too tight. The stitches should be removed as soon as possible. The quantity of skin removed in the ellipse depends on the amount of broadening of the tip and alæ. A narrow piece should be first removed, and subsequently more if necessary. The skin is then approximated with very fine sutures throughout the length of the incision, a figure-of-eight suture being used at the tip to approximate the deeper parts, and the wound is covered by a light dressing of collodion, iodoform and gauze. The advantages of this operation are, in his opinion: 1. The absence of foreign bodies. 2. Correction made with living attached tissue, having its own blood supply. 3. Ability to correct at the same time minor deformities. 4. Having the field of operation in sight. 5. A minimum of scar.

44. **Agar-Agar Injections for the Production of Connective Tissue.**—Kramer has experimented with melted agar jelly introduced in the fluid state into one side of the chest in rabbits. The animals were killed after a varying number of days. In the animal killed forty-eight hours after injection there was found a mass that had lost the gelatinous appearance of jelly and resembled an antemortem heart clot more than anything else. On microscopic examination it was found that the jelly had become honeycombed with small round cells. A section taken from a mass obtained from an animal killed after seven days showed still further infiltration and signs of beginning degeneration. In one taken after twelve days there were many fibroblasts and new blood vessels beginning to be formed. The mass of agar jelly at first infiltrated by small round cells is being replaced by vascularized connective tissue. After thirty days a newly-formed blood vessel could be plainly seen in the section. He thinks these experiments will be found to be of some surgical value. It is very often desirable to produce an artificial growth of connective tissue by means of some such injection. In several cases of inguinal hernia the sac and canal have been filled with the material, which has become organized and cured the defect. The permanency of the cure will be determined only by time.

45.—See abstract in THE JOURNAL, XXXVI, p. 1582.

51.—See abstract in THE JOURNAL, XXXVI, p. 126.

55. **The Insanity of Adolescence.**—Pickett analyzes 58 cases of dementia and finds that a considerable proportion of these occurred in patients whose insanity began between the years of 15 and 30. He shows by a graphic method—a sort of birdseye view—that the great majority of cases come under what is called katatonia or the dementia precox of Kraepelin. On the average, two-thirds of the cases met with at the Philadelphia Hospital between the ages of 15 and 30 become chronic dements or die of intercurrent disease, an important clinical fact. He insists on the importance of using prognosis as a basis of classification, making the conventional forms only a primary and secondary classification for convenience sake.

63. **Pulmonary Tuberculosis.**—Lewis discusses the diagnosis, etiology, symptoms, prognosis and treatment of tuberculosis. As regards heredity he thinks there is little reason to consider it important, but he believes also that the human system is normally resistant to the invasion of tubercular germs. The predisposing cause is, in fact, decrease of vital resistance or special susceptibility. The exact nature of this is little known; it probably consists of a certain chemical or histological condition of the lymph nodes due to hereditary tendencies or conditions of environment, which fail to arrest or inhibit the growth and the ingress of germs, or second, of some retrograde metamorphosis of the structure in any part of the body, generally in the lungs, or a trophic, traumatic or toxic influence favoring the invasion. Among the causes which diminish the vital resistance he puts air starvation first, either deficient supply of good air or incapacity to receive it. Next to this come gastrointestinal disorders. The symptoms are discussed at length. He does not lay great stress on the absence of tubercle bacilli, for they may not be readily found. The temperature range is one of the earliest symptoms. He is in the habit of loaning an accurate thermometer to intelligent patients so that they can keep a two or four hour record of their temperature. Cough is also a symptom of which patients may make little; it is not necessarily spasmodic. Emaciation is a symptom of much importance. The symptom of early hemorrhage has not been, as a rule, common in the incipient stage in his experience. The physical signs are briefly noticed and the principal points of the diagnosis are, in his opinion, careful attention to the temperature range, character and frequency of the pulse, cough, changes in body weight, and sputum examinations. The prognosis is far better than it used to be. We should build up the vital resistance, encourage regular habits, use hydrotherapy, good nutrition, and compulsory notification. He believes in over-nutrition. He considers raw eggs excellent, and thinks that as many as ten or twenty a day are justifiable in feeding. Of all the drugs that have been tried, strychnin stands at the head and he would give it freely. Next to this comes arsenic and if the cough requires some amelioration, guaiacol carbonate combined with codein or heroin is very efficient. He has little faith in creosote. Atropin may be useful in night sweats. The average patient is markedly benefited by an alcohol bath and recovered [illegible] at bedtime. Alcoholic stimulants have very little use internally. While admitting the importance of the stomach and its condition as pointed out by Osler, Lewis would go farther and show that the cure depends entirely upon absorption, assimilation of nutriment. If the body metabolism is such that its tissues are able to acquire an amount of nutrient and reconstructive material greater than the general waste, the patient will live, if not, he will die.

64. **Management of Fevers.**—Love insists on the importance of attention to the digestive tract in fevers particularly. He thinks that the liberal use of water and flushing of the alimentary canal are beneficial. In the management of fevers of whatever origin or cause he recommends the following: 1. Prompt, potent purgation. 2. Keeping up the action of all the eliminating organs to their full extent, and, the lungs are the most important of these, an abundance of oxygen, and after this comes water in abundance. 3. Intelligent attention to nutrition, which demands the complete withholding of food in the beginning for several days and later only the blandest and most digestible foods in small quantities. The pushing of food can not be safely done until the secretions have all been corrected, and it is evident that the digestive organs are in no way crippled. 4. Temperature can be best held down and the nervous strain tranquilized by hydrotherapy and flushing and the easiest way is the best. The cold bath not only helps the excretion, but quiets the fever. 5. We may also use gentle manual massage and even some of the manipulative methods of the osteopaths for soothing purposes and as a stimulant and tonic. 6. Sleep. Complete rest at proper intervals, physicially and mentally are essential. 7. "The Big Four Route" to health in all diseases including fevers is first, elimination; second, disinfection; third, nutrition, this means little or no food during the acute stage including stimulation, and fourth, tranquilization—rest. 8. We should not ignore the psychic elements and we should lead the patient in

Watchful attention must be given to early signs of internal complications of viscera.

21. **Carbolic Acid in Burns.**—Three cases are reported by Muench, one of his own experience and two others, in which pure carbolic acid was applied to burns, causing immediate cessation of pain with no subsequent swelling or inflammation. The corroded skin came off in a few days, leaving a new skin and causing absolutely no inconvenience or trouble, not even a scar or contraction of muscle. In one case the burn was very extensive, covering the entire head, face, neck and hands, and in this case he gave a hypodermic injection of morphin. The patient recovered without a single scar, although there was sloughing on the end of the nose and rim of the ears.

22. **Petroleum Compounds.**—Reyburn calls attention to the inertness of petrolatum when given internally. He says it passes unchanged through the intestinal tract and therefore is insoluble in the gastric juice and intestinal canal and can be recovered as a whole in the feces. Its usefulness as a remedy, therefore, must depend on its unirritating and demulcent properties.

24. **Delirium Tremens.**—Perry has no sovereign remedy for delirium tremens. He does not believe in the sudden withdrawal of alcohol in chronic habitués. It is his practice to put the patients on a liquid diet as nutritious as can be borne, a goodly quantity every two hours during the day. In mild cases he stops the alcohol at once; in severe ones it is seldom completely withdrawn before the fourth or fifth day. The quantity, however, is lessened and as substitutes he uses ammonia, camphor, hyoscyamus, valerian, capsicum, ginger, etc. The heart must be supported by strychnin, nitroglycerin, etc., and small doses of opium may be employed. He thinks chloral hydrate, alone or combined with potassium bromid, one of the best things there is in some conditions of insomnia. He has employed hyoscin hydrobromate, though this is not a safe remedy. A better agent is musk, but its high cost is prohibitive in many cases; apomorphia properly used is safe, but is usually pushed too far, as has been the case in the drink cures. Morphin is not constant in its action; in most cases it is quieting, but seldom efficient alone. When the patient goes to sleep he must not be disturbed, though the sleep may last fourteen or fifteen hours. The attendant should be fearless and humor the patients in a practical way. Some patients, however, are extremely obstinate, and may require restraint, though only as a last resort. Lying on the back, a spread eagle is made of the unfortunate by towels and sheets. The patient will tug at his fastenings and be irritated, but is finally exhausted and possibly will fall asleep.

25. **The Effects of Alcohol.**—Beyer finds alcohol is primarily a stimulant, but a protoplasmic poison. He criticizes Dr. Woodruff's expressed ideas as to its value in the tropics. He has seen very little good from giving it in tropical climates, though in some cases for temporary purposes he has employed it in the engine and fire-room force—one ounce of whisky every twenty-four hours. The temperance movement generally has done much good, and he mentions an experiment of practical total abstinence in a recent Dutch expedition in the East Indies with extraordinarily good results.

26. **Delirium Tremens.**—Ellsworth differs from Perry in that he would cut off alcohol in every case, give milk and water abundantly and avoid hypnotics. In his experience with over 500 cases, he has never used restraint or allowed alcohol. He has had only two fatalities, and these patients were in a state of collapse when he received them. He attributes his success to the perfect freedom he allows the patients, that is, in not hampering their movements, in keeping the room thoroughly ventilated, giving good nourishment at short intervals, and the absolute prohibition of alcohol. He reports a case.

27. **Myomectomies.**—Baker reports a case of myomectomy, and in reviewing it makes the following suggestions: 1. The importance of performing myomectomies in preference to hysterectomies in most of the cases of fibroids during the child-bearing period. 2. Even though the patient and her friends may prefer a total hysterectomy for various reasons, principally among which are the facts of the extreme suffering of the patient or the great loss of blood, which make them desirous of absolutely putting an end to the menstrual process, it is generally better surgery to remove the cause of the suffering, and leave the uterus and ovaries in a state which may be of great future usefulness and certainly able to perform their normal functions. 3. The greater length of time necessary to perform several myomectomies in any given case is usually more than overbalanced by the complete insurance of the integrity of the organs involved.

29. **Intimate Action of Silver Nitrate.**—Mays bases his treatment on the theory that pulmonary tuberculosis is, in the majority of cases, primarily a neurosis in which the vagi participate and that the pulmonary disintegration is secondary. He believes direct stimulation of the vagi favorably influences the condition of the lungs. The mechanism of silver nitrate injections is of such a nature as to stimulate the vagi to a more vigorous action and in this way they create antagonism to disease that diffuses itself throughout the manifold ramifications of these nerves.

36. **The Cleansing of Floors.**—Owen recommends a finish on hospital floors of wax, linseed oil, turpentine, floor finish and benzine in the following proportion: Wax, 5 pounds; linseed oil and turpentine, 2 gallons each; floor finish (permanere), 1 gallon, and benzine, 10 gallons. This is applied once a week and laid on with a piece of cotton, brushed and polished with a cotton mop. He believes that too much floor scrubbing is responsible for some of the sickening odors which are due to decomposition taking place both in and on the floors. The danger of fire from the use of this material is very slight if only a small quantity is kept on hand to use at a time.

40. **Intraperitoneal Rupture of the Bladder.**—In case of intraperitoneal rupture of the bladder treated by laparotomy, it is evident, according to Alexander, that successful results in every case depend upon three things: 1. Surgical interference at the earliest possible moment after the accident. 2. Thorough cleansing of the peritoneal cavity. 3. Perfect closure of the bladder wound by sutures. The great object of the operation is to prevent peritonitis and septic infection, and he asks how can we prevent delay of operation in these cases and suggests that suprapubic incision, and exploration of the prevesical space is the best method. The injection and infiltration tests are liable to be misleading and are dangerous. Asepsis of the peritoneum can be best obtained by thorough flushing of the cavity with hot normal salt solution. For closure of the bladder wound he has used silk, that is, a layer of interrupted Lembert sutures and a second layer of crossed mattress sutures. The main point is not the suture material, provided it will not be too quickly absorbed, but the manner in which the suturing is done. He reports an operation and gives a tabulated statement of cases from the literature.

41. **Torsion Strangulation of the Testis.**—Scudder reviews the conditions and the literature of this disorder and finds that, in the majority of cases, its causes are rather mysterious, though slight trauma may produce it. He has found 31 cases in the literature and reports an additional one.

42. **Fracture of the Carpal End of the Radius.**—The different forms of possible fracture of the carpal end of the radius are discussed and illustrated both by diagrams and skiagraphs. The advantages of the Roentgen ray in this injury are recounted; they have thrown new light upon its possibilities. Beck concludes that in many cases of fracture of the carpal end of the radius producing so-called sideward pushing of the ulna, there is, in fact, a fissure or fracture of the ulna which was not recognized in former years, and this is seen only through a good skiagraph made with a good tube. The treatment of the different forms is described and the importance of perfect replacement insisted upon.

43. **Saddle Nose.**—The operation of Gwyer is described as follows: A longitudinal incision in the middle line at or near the root of the nose, depending on the amount of deformity

and carried downward towards the tip of the nose. At a point depending on the conditions existing, the line of incision divides into two lines separating more or less and coming together again below the tip, forming an ellipse. The skin included in the ellipse is removed. The skin is then dissected loose for a sufficient distance on either side, especially in the region of the deformity. A flap is next dissected out of subcutaneous tissue, and perhaps cartilage, starting at or below the tip and raising the flap as far as the lower end of the depression. The flap is made thicker in the middle than at the sides or ends and the thickest part placed in a position corresponding to the most depressed part. It is better not to carry the upper end of the incision too high, but having loosened the skin at that point, to tuck the free end of the flap under it. Such a course makes a smaller scar and union is prompter and firmer. After raising this flap, a portion of the cartilage lying on either side of the median line of the tip is removed, the amount depending on the spread of the nostrils. The suturing should be done with a small needle, preferably with horse-hair. The approximation should be very accurate and not too tight. The stitches should be removed as soon as possible. The quantity of skin removed in the ellipse depends on the amount of broadening of the tip and alæ. A narrow piece should be first removed, and subsequently more if necessary. The skin is then approximated with very fine sutures throughout the length of the incision, a figure-of-eight suture being used at the tip to approximate the deeper parts, and the wound is covered by a light dressing of collodion, iodoform and gauze. The advantages of this operation are, in his opinion: 1. The absence of foreign bodies. 2. Correction made with living attached tissue, having its own blood supply. 3. Ability to correct at the same time minor deformities. 4. Having the field of operation in sight. 5. A minimum of scar.

44. **Agar-Agar Injections for the Production of Connective Tissue.**—Kramer has experimented with melted agar jelly introduced in the fluid state into one side of the chest in rabbits. The animals were killed after a varying number of days. In the animal killed forty-eight hours after injection there was found a mass that had lost the gelatinous appearance of jelly and resembled an antemortem heart clot more than anything else. On microscopic examination it was found that the jelly had become honeycombed with small round cells. A section taken from a mass obtained from an animal killed after seven days showed still further infiltration and signs of beginning degeneration. In one taken after twelve days there were many fibroblasts and new blood vessels beginning to be formed. The mass of agar jelly at first infiltrated by small round cells is being replaced by vascularized connective tissue. After thirty days a newly-formed blood vessel could be plainly seen in the section. He thinks these experiments will be found to be of some surgical value. It is very often desirable to produce an artificial growth of connective tissue by means of some such injection. In several cases of inguinal hernia the sac and canal have been filled with the material, which has become organized and cured the defect. The permanency of the cure will be determined only by time.

45.—See abstract in THE JOURNAL, XXXVI, p. 1582.

51.—See abstract in THE JOURNAL, XXXVI, p. 126.

55. **The Insanity of Adolescence.**—Pickett analyzes 58 cases of dementia and finds that a considerable proportion of these occurred in patients whose insanity began between the years of 15 and 30. He shows by a graphic method—a sort of birdseye view—that the great majority of cases come under what is called katatonia or the dementia precox of Kraepelin. On the average, two-thirds of the cases met with at the Philadelphia Hospital between the ages of 15 and 30 become chronic dements or die of intercurrent disease, an important clinical fact. He insists on the importance of using prognosis as a basis of classification, making the conventional forms only a primary and secondary classification for convenience sake.

63. **Pulmonary Tuberculosis.**—Lewis discusses the diagnosis, etiology, symptoms, prognosis and treatment of tuberculosis. As regards heredity he thinks there is little reason to consider it important, but he believes also that the human system is normally resistant to the invasion of tubercular germs. The predisposing cause is, in fact, decrease of vital resistance or special susceptibility. The exact nature of this is little known; it probably consists of a certain chemical or histological condition of the lymph nodes due to hereditary tendencies or conditions of environment, which fail to arrest or inhibit the growth and the ingress of germs, or second, of some retrograde metamorphosis of the structure in any part of the body, generally in the lungs, or a trophic, traumatic or toxic influence favoring the invasion. Among the causes which diminish the vital resistance he puts air starvation first, either deficient supply of good air or incapacity to receive it. Next to this come gastrointestinal disorders. The symptoms are discussed at length. He does not lay great stress on the absence of tubercle bacilli, for they may not be readily found. The temperature range is one of the earliest symptoms. He is in the habit of loaning an accurate thermometer to intelligent patients so that they can keep a two or four hour record of their temperature. Cough is also a symptom of which patients may make little; it is not necessarily spasmodic. Emaciation is a symptom of much importance. The symptom of early hemorrhage has not been, as a rule, common in the incipient stage in his experience. The physical signs are briefly noticed and the principal points of the diagnosis are, in his opinion, careful attention to the temperature range, character and frequency of the pulse, cough, changes in body weight, and sputum examinations. The prognosis is far better than it used to be. We should build up the vital resistance, encourage regular habits, use hydrotherapy, good nutrition, and compulsory notification. He believes in over-nutrition. He considers raw eggs excellent, and thinks that as many as ten or twenty a day are justifiable in feeding. Of all the drugs that have been tried, strychnin stands at the head and he would give it freely. Next to this comes arsenic and if the cough requires some amelioration, guaiacol carbonate combined with codein or heroin is very efficient. He has little faith in creosote. Atropin may be useful in night sweats. The average patient is markedly benefited by an alcohol bath and rub down at bedtime. Alcoholic stimulants have very little use internally. While admitting the importance of the stomach and its condition as pointed out by Osler, Lewis would go farther and show that the cure depends entirely upon absorption, assimilation of nutriment. If the body metabolism is such that its tissues are able to acquire an amount of nutrient and reconstructive material greater than the general waste, the patient will live, if not, he will die.

64. **Management of Fevers.**—Love insists on the importance of attention to the digestive tract in fevers particularly. He thinks that the liberal use of water and flushing of the alimentary canal are beneficial. In the management of fevers of whatever origin or cause he recommends the following: 1. Prompt, potent purgation. 2. Keeping up the action of all the eliminating organs to their full extent, and, the lungs are the most important of these, an abundance of oxygen, and after this comes water in abundance. 3. Intelligent attention to nutrition, which demands the complete withholding of food in the beginning for several days and later only the blandest and most digestible foods in small quantities. The pushing of food can not be safely done until the secretions have all been corrected, and it is evident that the digestive organs are in no way crippled. 4. Temperature can be best held down and the nervous strain tranquilized by hydrotherapy and flushing and the easiest way is the best. The cold bath not only helps the excretion, but quiets the fever. 5. We may also use gentle manual massage and even some of the manipulative methods of the osteopaths for soothing purposes and as a stimulant and tonic. 6. Sleep. Complete rest at proper intervals, physicially and mentally are essential. 7. "The Big Four Route" to health in all diseases including fevers is first, elimination; second, disinfection; third, nutrition, this means little or no food during the acute stage including stimulation, and fourth, tranquilization—rest. 8. We should not ignore the psychic elements and we should lead the patient in

the direction of his best good. We should study disease not less, but man more.

67. **Division of the Fee.**—Gillespie reviews the question of remuneration to the physician and consultant, especially the surgeon, and suggests the following propositions: "1. That division of the fee is just to the physician, surgeon and patient, when a surgeon is called to operate and is assisted by the physician in preparation, operation and after-treatment. 2. That cases referred to a specialist for treatment or operation, without the assistance of the physician, belong to the specialist. No commission should be paid or received, hence no division of the fee. 3. That cases referred from the country to specialists in the city belong to the operator, as he assumes all responsibility of preparation, operation and after-treatment, and no fee or commision should be paid. 4. That a specialist, visiting the country for the purpose of operating only, should divide the fee with the attending physician who has charge of the case or for whom he operates. 5. That the general practitioner in the city should conduct financial matters, collect the bill and pay the surgeon what is agreed upon between them; and that with this arrangement the patient has nothing to do. 6. That a commision paid to the layman or commission as such paid to any one is wrong, unjust and unethical. 7. That the question of the division of the fee or the payment of commission should, if possible, be settled; that it is of necessity a condition difficult to reach by expedients available to the profession. 8. That the objects sought for are satisfaction, not disappointment for the patient, and a profitable visitation for the general practitioner and specialist, both present and prospective."

68. **Ophthalmia Neonatorum.**—Blitz recapitulates his views by insisting on strict antisepsis before birth; the nurse washing the eyes of the new-born first, before the rest of the face, head and body, using a sufficiently strong disinfecting solution at once when sure or suspicious of gonorrhea in the mother; but a mild cleansing wash only when no disease exists in the vagina. The eye should be inspected daily during the first week after birth, if possible; if impossible, the nurse should be instructed to report at once any signs of inflammation. If it is a case of true ophthalmia blenorrhoica, treat it promptly. Employ absorbent cotton in cleansing the eye; never using the same piece twice. Persist in the same treatment until inflammation has disappeared and the greatest possible amount of vision restored.

72. **Pneumectomy.**—After noticing a case in which there was an abscess destroying the right lung, relieved by operation for empyema, Jacobson reports his experiments on dogs in the removal of lungs. The case suggested to him that such an operation would be possible without destroying life or causing serious injury. Seven dogs were operated upon, in six of which there was total resection of the right lung and in one the removal of the upper two lobes. Of the total resections, 3 died and 3 lived; in none of the cases was the death directly due to the operation. The experiments prove that the removal of the entire right lung is possible and that one lung is sufficient to carry on life in comfort. The dangers of operation are two, pneumothorax and secondary hemorrhage. The best method of combating the former seems to be by the use of the Fels-O'Dwyer apparatus for artificial respiration during the operation. The complication of secondary hemorrhage presents difficulties which are not so serious and the author thinks that the use of the angiotribe as suggested by Murphy would be of decided advantage.

76. **Gastric Ulcer.**—The operative procedures in cases of gastric ulcer are treated of by Howitt. He first notices the operations for ulcerative stenosis of the pylorus for which pyloroplasty should be preferred, the part being as well as possible brought into view, the peritoneal cavity guarded with sterile gauze, and the ulcer removed by elliptical incision running in the long diameter of the parts, the length depending on the amount of contraction. It is then sutured in such a manner that when closed the line of union is at right angles to the original incision. In a large proportion of cases, however, this ideal operation is not possible and gastro-enterostomy is desirable. Two practical points are specially insisted upon: 1. To make sure that the proximal arm of the jejunum is sufficiently long to prevent tension in any possible movement of the stomach. 2. To anchor same arm to stomach wall with sutures just above and an inch or more to the right of point of anastomosis. This last does away with the spur or acute angle of the bowel, and prevents untoward events which frequently prove detrimental after gastro-enterostomy. In hour-glass contraction of the stomach, several methods have been suggested; some prefer gastro-anastomosis. Gastro-enterostomy is the only safe course when the hour-glass contraction is near the pyloric orifice and complicated by adhesions and inflammatory thickening of the parts. In perforating ulcer he thinks that as soon as we are satisfied it has taken place, it is good practice to give morphin hypodermically. It relieves suffering, mitigates shock and lessens the amount of anesthesia. It is good practice to eviscerate the bowels as soon as the incision is completed and protect them with sterile gauze, kept warm and moist by irrigation. This gives us ample room for thorough inspection. When the trouble is in the posterior wall near the esophageal opening, it may be impossible to excise the affected spot, in which case it may be inverted and closed by layers of sutures. The abdomen should be thoroughly flushed, care being taken with each flank, the pelvic cavity, and lesser peritoneum. On replacing the bowels it is good practice to spread the omentum carefully over and fix it below with sutures to prevent the coil becoming adherent to the line of incision. Care should be taken after suturing, to dress with dry sterile material and seal so as to prevent infection by discharge through the drainage tubes. The author advocates this practice of evisceration and temporary enterotomies to let out the gas accumulations, because it reduces shock, makes work easy, relieves bowel distention, permits the escape of germ-laden material and renders later vomiting and paralysis much less probable. The after-treatment consists of the external application of heat, strychnin hypodermically, normal saline solution by the rectum or subcutaneously, and nutritive enemata. No food is given by the mouth for four or five days.

80.—See abstract in THE JOURNAL, ¶24, p. 534.

85. **Mastoiditis.**—The question of when to operate in mastoiditis is discussed by Phillips, who thinks that when symptoms of mastoid suppuration become apparent, we are face to face with the necessity of decision on this point. The very early symptoms may be, and sometimes are, relieved by other measures than external operation, such as free incision of the drum membrane, which will frequently relieve all indications of mastoid involvement. The whole theory of relief is based on the importance of free drainage and further involvement of the mastoid cells is checked by this in some cases, together with local blood-letting, the ice coil and poultices. During the early stages of middle ear suppuration, and even after mastoid symptoms appear, irrigation with hot sterile water is good treatment, but the tendency is to carry all these measures too far. He does not use the ice coil longer than twenty-four or thirty-six hours and poulticing would be almost as bad. The external operation should be performed when permanent remission of symptoms has not been obtained by complete drainage through treatment or application of ice coil or local blood-letting, when there should be absolutely no delay. Most hospital cases reach this point before they are seen and the utility of the mild measures is past. By still further delay complications may arise that make the operation more extensive and may even endanger life. In chronic otorrhea external operation may be required to overcome suppurative processes. This is especially so in cases with chronic otorrheic discharge and attempts should be made to cure all these cases permanently.

FOREIGN.

British Medical Journal, August 17.

Enteric Fever: Its Natural History, Modes of Dissemination and Prophylaxis. A. C. HOUSTON.—In opening the discussion Houston remarks that he was struck by three things: 1. The inability of medical science to stamp out a dis-

ease which is still classed as preventable. 2. The failure in this direction in South Africa. 3. The notable discoveries that have been made in connection with its bacteriology in the last few years. He considers the agglutinative phenomenon as one of the most remarkable bacteriologic discoveries, though he points out its exceptions. He gives a tabulated statement of the points of differentiation between bacillus coli and bacillus typhosus. Nevertheless, it cannot be said that we have yet been able to isolate the bacillus typhosus from sewage and water supply. He asks whether there may not be some direct race of coli-like microbes having specialized properties and infectious qualities, but to consider them an agent in the propagation of the disease seems to him unsupported by present evidence. The water-borne nature of typhoid is an established fact, as is also the action of milk. He calls attention to the recent discoveries in regard to the danger of shellfish taken from sewage-polluted water. The question of soil in relation to typhoid fever is one requiring much caution, though he mentions that it is well to preserve an open mind on the question. The action of flood water, sewer gas, ground air, and ground water are also noted, and sewage, as it is a dangerous source of pollution. We must see that our water supplies are free from the bacilli of the colon group. The vitality of the typhoid germ in water is a matter in regard to which there is still much difference of opinion, but that some continue to exist for a long time seems to be indicated by Klein's results. The danger of dust is noted and also the fact of the bacillus typhosus escaping destruction under modern methods of sewage treatment, in which the author's own conclusions are somewhat different from those of the majority. He thinks it would be wise to regard the effluents from bacterial beds as still unsafe. Other points mentioned by Houston are typhoid bacilluria, and the action of urotropin on it, and recent evidences of infection through fried fish and laundry machinery. He mentions protective inoculation with Wright's vaccin, which he believes may be of use. The Widal reaction in relation to early diagnosis is too little employed by the profession. He then considered the sterilization of drinking water and filtration, and, as regards this last, believes that the sand filter only lessens the danger, and that small filters, with the exception of the Pasteur-Chamberland and, to a less degree, the Berkefeld, are only to be relied upon. The general measures which should be followed to-day are: To protect the water-supply and food from contamination; to be sure that drains and sewers are in good order, and to disinfect the stools and urine of enteric patients. Recent discoveries have shown us how manifold are the channels of infection, and how prolonged and serious the capacity of enteric fever patients to disseminate the disease may be. Recognition of the dangerous condition known as typhoid bacilluria and the value of urotropin as a remedy have a most important influence in the future in the control of the spread of the disease.

Vital Statistics of Enteric Fever. F. A. DIXEY.—The summary of Dixey's article is given as follows: "1. The death rate from enteric fever in London is a fluctuating one, but has on the whole materially diminished, the most marked descent having occurred about sixteen years ago. 2. The seasonal relations of enteric fever remain fairly constant from year to year, but there seems to be a tendency, at least in years of low general prevalence, towards a progressive flattening of the autumnal maximum. 3. A comparison between London and New York in respect of their climate and enteric death rate, indicates that some meteorological conditions, especially perhaps temperature, are factors in the activity of the enteric infection. The relation, however, is not of such a kind as to make itself apparent from year to year in one given locality. 4. It is probable that the diminution in the death rate of enteric fever is really somewhat greater than it appears to be, from the inclusion in former times of enteric cases under other heads, notably typhus and simple continued fever. This source of error, however, was never very important, and is now practically non-existent. 5. The case-mortality of enteric fever is almost stationary, and seems likely for the present to remain so."

Neutral Red in the Routine Bacteriological Examination of Water. WILLIAM G. SAVAGE.—This author finds neutral red a very valuable agent for the differentiation of the bacillus coli and gives the results of a number of experiments made by him as showing this fact: "1. That a positive reaction obtained as described, while not certainly diagnostic of bacillus coli, yet in the vast majority of cases pointed to the presence of that organism. 2. That a negative reaction renders the presence of bacillus coli highly improbable. 3. That the test is very readily applied, and with reasonable care, fallacies in its employment can be avoided. 4. That it is a test which is of great value in the routine examination of water."

The Fallacy of the Permanganate Disinfection of Wells (Hankin's Method). M. L. DHINGRA.—The author thinks Hankin's method of permanganate disinfection is of but little value. Potassium permanganate can only act under certain conditions, and even then is not continuous in action. It must first expend itself in oxidizing nitrites and organic matter before attacking the organisms, which are so resistant that it is applicable only in concentrated 5 per cent. solutions. For practical purposes it can be regarded only as a deodorant. The method is impossible in its practical application. The use of a couple of ounces of potassium permanganate does not bring about any profound changes in the chemical or biological constituents of well water.

The Lancet, August 17.

The Diagnosis and Surgical Treatment of Carcinomatous Stricture of the Colon. W. J. WALSHAM.—According to Walsham, the common form of carcinoma of the colon, viz., columnar-celled—is one of comparative benignity and may, for a considerable time, remain a purely local disease, the patient enjoying several years of comparative comfort before secondary deposits in the glands and internal viscera terminate his life. When, as is often the case, symptoms of acute obstruction have come on before surgical aid is sought, it is better to operate in two stages: 1. To do a primary colotomy with or without the withdrawal of the carcinoma on to the abdominal parietes. 2. When the patient has thoroughly recovered from the deleterious effects of obstruction, to remove the carcinomatous portion of the bowel and unite the ends above and below. There may be even almost complete stenosis and still no dissemination, but when dissemination at length occurs, with such symptoms as uneasiness, distension, eructations, and a series of conditions often attributed to indigestion, attacks of pain or spasm attributed to the colon independent of the time of taking food, liquid stools without any formed motions, constant progressive loss of weight and a constant desire to defecate, it is well to make an exploratory incision. If acute obstruction has supervened the safest course is to open the colon above the growth and to deal with the latter after the acute stage has subsided.

Annales de Dermatologie (Paris), July.

Treatment of Rodent Ulcer. CARLE.—The slowly developing ulceration, with no propagation to the ganglia and no effect on the general health, is frequently misunderstood, as no one thinks of the possibility of rodent ulcer. Carle describes three cases of six, eight and eighteen years' duration respectively—each erroneously diagnosed and treated as lupus or syphilis. Complete extirpation is indicated when possible, but if the ulceration has extensively invaded the face, as was the case in two of his patients, curetting and cauterization will cure after the possible failure of skin grafting and cauterization with potassium chlorate. With or without anesthesia or cocain, the entire ulcerating surface is thoroughly curetted. Hemorrhage was considerable in one case but was arrested by tamponing. A gauze pad was then applied, impregnated with a mixture of 1 gm. arsenious acid in 75 gm. each of alcohol and water. The gauze was removed the fourth or fifth day and the area painted with a stronger mixture, increasing the strength to one part of the acid in forty parts each of water and alcohol, and leaving the affected part open to the air. No permanent dressings were applied and the eye was protected

merely by a bandage. In two and one-half months the ulcer was covered with a good quality of epidermis and only a slight redness now marks the spot.

Kerosene Frictions for Alopecia Areata. HALLOPEAU.—A young woman who had had rebellious alopecia for more than a year, was practically cured by washing the head twice a day with soap and then rubbing kerosene vigorously into the bald patches. They soon became covered with soft hairs which by the end of eight months, had almost all been transformed into adult hairs.

Compression as a Means of Treating Ichthyosis. HALLOPEAU.—In a severe case of congenital ichthyosis described, the skin under the garters worn by the patient was normal. This suggested that compression might have some influence on the affection, and a bandage was applied to one arm to test this assumption. In a few days all the concretions under the bandage had disappeared. This fact suggests a new line of treatment for ichthyosis, and also indicates that the interference with the nutritional processes in this affection is not so severe as hitherto supposed.

Annales de la Soc. Med.-Chir. de Liege, June.

Practical Diagnosis by Microbian Antibodies. E. MALVOZ.—The presence of pathogenic microbes does not necessarily indicate that the bearer is infected by them. But if the organic fluids contain the specific antibodies—showing that they must have been elaborated as a means of defense against the pathogenic action of the microbes in question—there is no longer any doubt that the organism has been invaded by these microbes. The properties of the humors—the consequences of the reaction of the organism in defense and in immunization—testify much more certainly to the existence of infection than the discovery of the pathogenic microbes on the mucous membranes. This defensive reaction is revealed by the elaboration in certain cells of the organism of special substances whose nature is still a mystery, but which we term antibodies. These pass from the cells into the organic fluids or at least into the blood serum. They induce the specific agglutination, precipitation, bacteriolysis or globulysis, and hence have been called by various writers according to the special process under consideration, agglutinins, precipitins, antidiastases, antitoxins, etc. Their action, it has been proved, depends on the combination of the alexin, which is found normally in the blood, and the specific between-body or *sensibilisatrice*. The presence of these antibodies in the serum is the best possible evidence that the organism has been invaded by the specific microbe, that a reaction has occurred, in short, that it is having or has had the disease. The alexin does not seem to differ in various species, but the *sensibilisatrice* is specific for each. The new method of diagnosis is based on the corpuscle-destroying property of the alexin in serum rendered globulytic beforehand. If a serum containing a specific *sensibilisatrice* is added to an emulsion of the microbes in question, the *sensibilisatrice* clings to the microbes and filters out of the fluid with them. The microbes thus *sensibilized*, acquire an affinity for alexin, and when added to normal serum, take up or bind the alexin in it in the same way. But if the microbes have not been previously submitted to the action of a *sensibilisatrice*, the alexin is unaffected by them. Consequently, for diagnostic purposes, all that is necessary is to determine whether the alexin in a given specimen of serum is free or whether it has been bound by the microbes. This is easily determined by adding to the specimen of serum some red corpuscles in blood previously *sensibilized* by an antibody. If the reds are destroyed, this hemolysis or globulysis, as it is called, is the proof that the alexin is intact, and hence, it demonstrates the absence of the specific *sensibilisatrice* in the serum. Malvoz finds the serum of rabbits, rendered hemolytic for hens' blood, most convenient for this new method of diagnosis. Defibrinated hens' blood is injected into the rabbits several times in succession. The serum of the rabbits then acquires the property of destroying the red corpuscles in hens' blood by the action of the alexin contained in it. The process is visible to the naked eye from the diffusion of the red color through the fluid as the reds are destroyed. The alexin is destroyed by a temperature of 55 C., consequently the rabbit serum lost its hemolytic property if heated to this point, but the *sensibilisatrice* is not affected by the heat. Tests with animals inoculated with blastomycetes, established the presence of a *sensibilisatrice* in their blood every time, but tests of persons with cancer failed to disclose any *sensibilisatrice* in their case. This is an argument against the causal relation of the blastomycetes to malignant disease. The serum from the rabbits inoculated with the blastomycetes was heated to 55 C. and added to an emulsion of the microbes after mixing with a little normal rabbit serum, containing the normal amount of alexin. The microbes—blastomycetes in this case—absorb the alexin in case they have been previously *sensibilized* by the specific antibody, and when hens' blood is added to the mixture, the red corpuscles remain intact, and no change ensues in the shape of the corpuscles or the color of the fluid. On the other hand, in case there is no *sensibilisatrice* for blastomycetes in the serum, the corpuscles are speedily destroyed. Lambotte by tests on these principles has demonstrated the identity of the bacillus alvei with the bacillus mesentericus, which he has long maintained, but which he was unable to prove until provided with this new method of diagnosing the specific reaction of the organism to a given pathogenic agent. [See Editorial in THE JOURNAL of June 29, p. 1832.]

Bulletin Medical (Paris), July 10.

Chyliform Effusion in the Pleura. F. BARJON.—A chyliform effusion usually commences insidiously, with little or no fever, and the patient is generally lost sight of before the cure is complete. Only 13 cases of chyliform effusion were found in a recent collection of 49 cases of milky effusion in the thorax. It is characterized by the long latency, the chronic course and the large amount of fluid, rich in fat, with no glucose. A personal case is described. As the patient reacted positively to the tuberculin test and as animals inoculated with the fluid exhibited evidences of tuberculosis, Barjon is convinced that the chyliform effusion is the manifestation of a chronic infection of the pleura, determined by an attenuated bacillary infection—by the tubercle bacillus in the case related.

Nord Medical (Lille), August 1.

Cold Rectal Injections in Typhoid Fever. LEMOINE.—When for any reason it is impossible to apply cold baths in the treatment of typhoid fever, Lemoine finds that cold rectal injections are an efficient substitute. The water should be boiled and cooled to 18 or 20 C. and should be injected every two or three hours, the receptacle for the water being not more than 50 cm. above the plane of the bed. The canula should be inserted for 20 cm. and about 2 liters of water injected, very slowly, interrupting the flow from time to time so as not to distend the intestine too much. In the 32 cases in which this technique was followed, the temperature was reduced more rapidly than with the baths, but the effect was less durable. The temperature drops to the lowest point in twenty to thirty minutes after the injection, but in another half hour rises to what it was before the injection. Notwithstanding the insufficiency of the effect, the cold injections, as a rule, seem to ensure a lower temperature on the whole than the baths. The oscillations are less pronounced and the disease seems to run a more regular course. This fact he explains by the disinfectant action of the fluid as it washes out the intestine. He therefore recommends these injections, as far preferable to cold packs or applications which fatigue without really benefiting the patient. Delirium is exceptional in patients thus treated.

Presse Medicale (Paris), July 10.

Experimental Research on Smallpox. H. ROGER AND E. WEILL.—Rabbits inoculated with pus from a smallpox patient resisted the disease or survived much longer than the control animals, when they were fed on exceptionally nourishing food. Other animals fed with ordinary food rapidly succumbed to the disease. Applying these results to man, smallpox patients were given eggs, soups, etc., even during the febrile period, and the results have surpassed anticipations. Experience

has also shown that cases in which the patients refused this abundant nourishment, from lack of appetite or difficulty in swallowing, prove unusually severe with a grave prognosis. The smallpox produced in rabbits resembles more the disease as it appears in the new-born than in adults. In Roger's experience infants born to mothers in the course of smallpox, almost invariably die. Some die with a slow septicemia, hypothermia and emaciation, with no eruption. Others with these symptoms have a slight eruption characterized by small papules which dry up without suppuration. Others still may present the clinical picture of smallpox as it appears in adults.

Deutsche Med. Wochenschrift (Leipsic), August 15.

Diagnosis of Pharyngo-Esophageal Diverticulum. H. SCHMILINSKY.—A patient with recent pulmonary tuberculosis presented symptoms suggesting an aneurysm of the aorta, but radiography was negative. The difficulty in swallowing and the return of ingested fluids into the mouth, accompanied by mucus, indicated a diverticulum in the esophagus. Mucus was constantly rising into the mouth, especially when the patient bent forward, and pain was frequently experienced in the neck. The autopsy disclosed a typical pharyngo-esophageal diverticulum. In a similar case in a woman of 72, the symptoms had been noisy eructations, without vomiting or regurgitation of food. After a year she noticed that mucus came up into her mouth with the eructations; six months later food seemed to stick in her throat, mostly meat and bread, sometimes fluids. What she was unable to swallow returned, gurgling, into her mouth. Her chief annoyance, however, was the frequent rising of mucus into the mouth which disturbed her even in sleep. A sound introduced into the esophagus for 17 cm. encountered an obstacle. A rubber bag on the end of the sound could be inflated to the size of a pigeon's egg without discomfort, but could not be withdrawn, showing that it must be in a diverticulum with a narrow entrance. The esophagoscope confirmed the existence of a diverticulum, the entrance 14 cm. below. The Roentgen rays also showed a diverticulum very distinctly after the patient had swallowed a little bismuth. The bismuth deposits could be seen in the diverticulum and could be stirred up with a sound. As they probably caused the mouth of the sac to gape and admit air, the diverticulum itself cast a shadow on the screen.

Diagnosis of a Deep Diverticulum in the Esophagus. W. ZWEIG.—There are only seven cases on record of a diverticulum low down in the esophagus, but three have been observed recently at Boas' clinic. Improved diagnostic technique will probably render their discovery more frequent. Zweig introduces a tube with a funnel-shaped opening into the esophagus. It almost invariably passes into the diverticulum. A second similar tube is then introduced, and this always passes on into the stomach. The first tube is then filled with a solution of methylene blue, the amount calculated to correspond to the capacity of the diverticulum, previously determined by aspirating the contents. The tube in the stomach is then withdrawn, if the blue solution is held in an actual diverticulum, the stomach tube will show no traces of the stain, while if the disturbances have been caused by a mere dilatation of the esophagus, the stomach tube will be stained and will contain more or less of the blue fluid. Radiography after the patient has swallowed bismuth, confirms the diagnosis. In none of the three cases was there any vomiting of food from a previous day. Swallowing was painful in only one case. It was impossible to obtain any information from gastrodiaphany. Attempted inflation of the stomach with carbonic acid caused the inflation of the diverticulum alone in two cases, with intense oppression and expulsion of foam. Zweig recently had a case of dilatation of the esophagus under observation. The food ingested seemed to stop just above the stomach where it remained until the man drank water, when it all slipped at once into the stomach. This phenomenon had been noted for twenty-seven years and had never caused any other disturbance. He is now 63 years old. He was run over by a carriage and had a rib fractured in 1863. The two-tube test disclosed a moderate dilatation of the esophagus 44.5 cm. below the teeth.

Mitteilungen a. d. Grenzgebiete (Jena), vii, 3.

Thyroidism in Case of Simple Goiter. J. VON MIKULICZ.—The functions of the thyroid gland are not necessarily disturbed in every case of simple goiter. Such disturbances are rather the exception than the rule. In 117 cases of uncomplicated goiter, 48 showed no other symptoms or merely symptoms of compression of adjacent organs, especially the trachea. In 69 there were nervous symptoms indicating hyperfunction of the thyroid gland, with or without indications of compression. Study of these various cases shows that a moderate degree of tachycardia—112 the maximum—must be included in the symptom-complex of a goiter unaccompanied by dyspnea or alterations in the heart and not complicated by Basedow's disease. There is no exopthalmus, but nervous symptoms were noted in nearly all of the last group of 69 patients: two symptoms in 9; three in 13; four in 8; five in 2 and six in 2. In the last 2 cases the entire picture of restlessness, subjective palpitation, angina pectoris and tremor of hands and tongue, coexisted with headache and vertigo. Tremor was the most frequent symptom and headache next. The clinical picture of the simple goiter in his cases, therefore, included a moderate amount of tachycardia, certain nervous symptoms, alone or in combination, and slight suggestions of the ocular symptoms of Basedow's disease in a few instances. He calls this the syndrome of spontaneous thyroidism. Basedow's disease, therefore, can not be explained by hyperfunction of the thyroid gland alone. The goiter, however, is an important factor, whether we attribute the disease to a primary neurosis or to any other kind of autointoxication. The thyroid gland in the circulation of the subject of Basedow's disease acts like a multiplier. The goiter is not a primary, but merely one of the co-ordinated symptoms of the disease. The thyroid gland becomes hypertrophied on the basis of the same influences which induce the manifold trophic disturbances in other organs and tissues. The hypertrophy of the gland impels it to excessive function, and thus the symptoms of spontaneous thyroidism are superposed, multiplying the entire clinical picture. Removal of the thyroid gland abolishes the multiplier, and renders recovery possible, either spontaneous or assisted by the usual internal measures. The failures to cure after extirpation of the gland are due to the severity of the original affection, which maintains the syndrome in spite of the removal of the multiplier. In the cases of Basedow's disease without a goiter, the primary disturbances are so severe that the typical clinical picture is produced without the aid of the multiplier.

Relations Between Erysipelas and the Streptococcus. P. KLEMM.—The streptococcus induces serous inflammation as the principal effect of its action. Its pyogenic and necrotizing properties are only secondary and are not manifested except under certain conditions. The streptococci usually find their way into the circulation through the lymphatic apparatus of the throat, especially through the tonsils. Swelling of the joints, etc., in follicular tonsillitis, scarlet fever, etc., is determined by a serous or sero-fibrinous transudation into the cavity of the joint without destruction of tissue. Complete restitution is the rule, while a staphylococcus infection destroys the tissues and forbids anatomic and functional restitution. Notwithstanding the apparent differences between a simple surface erysipelas and an intramuscular streptococcus phlegmon, both processes are absolutely alike, and the difference between them is merely the mechanical conditions of the tissues involved. Klemm therefore considers erysipelas a rapidly spreading serous lymphangitis, located either above or below the fascia, and with the streptococcus as the causal agent. He is convinced that infection occurs by contact, as he never succeeded in inducing it or in developing cultures of the streptococcus from the air. The practical benefit of his researches is that he has succeeded in banishing erysipelas from his hospital. All patients with suppurating streptococcus affections, such as otitis media, follicular tonsillitis, etc., are liable to transmit the streptococcus infection to others whose skins or throats are in a specially receptive condition. New patients are examined for streptococci and if they are discovered, the patients are put in a special streptococcus ward with separate at-

tendants. Especial attention is paid to tuberculous fistulæ which are liable to become infected with streptococci at any moment. Every precaution is taken to reduce the chances of infection to the minimum. Dressings are cut off instead of being unwound, and are placed at once in disinfecting fluid. He is inclined to believe that an already existing streptococcus mycosis renders the body more resistant to a second infection, as not a single case of erysipelas has developed, even in the streptococcus wards since these measures have been adopted.

Functional Results After Operations on the Stomach. R. RENCKI.—Seventeen cases in which operations were performed on the stomach for the cure of round ulcer or benign stenosis of the pylorus, have been followed to date. The cure has been complete and permanent in all those cases in which the chemistry of the stomach has returned to normal. All the patients have been wonderfully relieved and improved, but a few with persisting hyperchlorhydria complain of heartburn and oppression in the stomach, and a small number exhibit symptoms of a recurrence of the ulcer. The fate of a round ulcer depends on the chemistry of the stomach. As long as there is excessive secretion of HCl we can not be sure that the ulcer has healed over or that another may not recur, as in one of the cases reported. Hyperchlorhydria is the cause of the round ulcer, and it should never be neglected, for fear of this termination. In all other respects the functional results of the gastro-enterostomy have been satisfactory from every point of view.

Muenchener Med. Wochenschrift, August 13.

Diagnosis of Malignant Tumors. E. LESER.—Out of 392 patients operated on for malignant tumors in the last eleven years, 305 have been traced to date and 78 found in good health. They include 9 cases of carcinoma of the face, 16 of the breast, 29 of the alimentary canal, 3 of the testicles and 2 of the kidneys. None of the patients with carcinoma of the tongue or esophagus is still alive. The operation was performed over ten years ago in 7 cases; over six years in 25, and over three years in 29. The diagnosis of a carcinoma of the stomach or intestines is usually only presumptive, as there are no typical symptoms. The insignificant, invisible hemorrhages recently described by Boas (see THE JOURNAL, June 8, p. 1670), may prove of valuable assistance. Alternation between diarrhea and constipation is important and should suggest malignant disease in a patient between 35 and 50; and the feces should be carefully examined with the microscope. Digital examination in profound narcosis should never be neglected. In all cases an exploratory laparotomy should be done on the mere suspicion of carcinoma. When the diagnosis becomes positive, the patient is already doomed. Leser operates, therefore, at the earliest moment and does not refuse to operate even in advanced stages, as the patient's condition is rendered so much more tolerable. He adds that 14 of his 42 patients operated on for carcinoma of the rectum, are still alive, several more than seven or eight years after the operation. A number had been operated on elsewhere previously for one to three recurrences. The lymph glands in the vicinity—even those apparently sound—should be extirpated with the neoplasm and the connecting routes and connecting tissue. The cosmetic effect is less satisfactory, but the curative results are far better. He removes the entire lip and says that the entire tongue must be ablated in case of a carcinomatous growth—partial operations are insufficient. Nature compensates the absent tongue by drawing up the tissues beneath and down from the cheek until almost a new tongue results. Sharp instruments should be used as little as possible; the neoplasm should be enucleated with the fingers, aided by the closed scissors, remembering that the tendency to spread is always in the direction of least resistance. Leser ascribes his successful results to his strict enforcement of the orders that each patient must return for examination regularly, at first every eight to ten weeks, no matter how well he feels. This is the only way to forestall recurrences. He has one patient in permanent robust health after five operations for recurring carcinoma, and others after three operations. Recurrences require prompt operating and no one but the physician is able to detect their approach.

Atropin Treatment of Ileus. GEBELE.—If an internal remedy is indicated in case of ileus, especially in ileus from paralysis, morphin is much to be preferred to atropin. In all other cases, surgical intervention is the only treatment. But in all cases of ileus benefit may be derived from lavage of the stomach and injection of several liters of oil, with, possibly, 70 to 100 gm. olive oil internally, repeated several times a day. An exploratory laparotomy is much to be preferred to the administration of atropin which masks the symptoms and allows the favorable moment for intervention to pass, as occurred in a fatal case reported.

Syphilitic Sciatica. A. BIEWERTH.—Mendel has recently described three cases of syphilitic sciatica and Niewerth has had occasion to treat another. All were promptly cured by mercurial treatment after the usual remedies, including potassium iodid, had demonstrated their inefficacy. Vapor baths caused violent exacerbations of the pains in one case, suggesting the existence of an acute inflammatory process.

Application of the Stomach Sound in Case of Ulcer. W. FLADE.—The information that can be derived in regard to ulcer of the stomach from introduction of the stomach sound or even from artificial inflation of the stomach with air or carbonic acid, is not very important. On the other hand, the procedure is by no means so harmless as generally accepted. The danger of perforation is particularly great in case of young women, and is especially imminent when the ulcer is located in the anterior wall. Severe hemorrhage seldom results, but the injury caused by the sound may entail the imperceptible hemorrhages to which Boas has called attention. The use of the stomach sound should be absolutely rejected in case of an established ulcer, and also in many other gastric affections in which it is now currently used. The writer is a specialist for gastro-intestinal affections and speaks from a wide experience.

Therapeutische Monatshefte (Berlin), July.

Treatment of Cutaneous Affections With Cold. E. SAALFELD.—Very favorable results are reported in this communication from the application of liquefied air, ethyl chlorid or a mixture of the latter with methyl chlorid. Saalfeld asserts that the prompt improvement and the convenience of this method of treatment commend it for all chronic cutaneous affections, with much infiltration, and in which it may be anticipated that resorption will follow an acute, artificially induced inflammation.

Symptomatic Treatment of Cough. M. SAENGER.—One of the best measures for relieving a cough is the inhalation of the vapors of menthol. Saenger says that an inexpensive and very effective method of inhaling is to warm a few crystals of menthol in a spoon over a candle for five to twenty seconds and then inhale the fumes, repeating as often as necessary. A simpler way, perhaps, is to pour ten to twenty drops of a 50 per cent. alcoholic solution of menthol on the palms and then hold them, like a mask, over the face. In case of excessive mucous secretions in the throat, he recommends injecting 1 or 2 gm. of a 10 to 20 per cent. solution of menthol in olive oil, directly into the throat. Violent coughing is induced which expels all the old accumulations of mucus, and enough of the menthol is retained to accomplish the purpose of an inhalation. This measure in chronic bronchitis or phthisis will arrest the cough for one to five hours after the first paroxysm is past, or even longer, if supplemented by inhaling as above described. It has a cumulative action and the intervals should gradually be lengthened. These injections have proved extremely effective in whooping cough. Hemorrhage is a contra-indication. [A writer in the *Bull. Med.* has recently suggested that the simplest method of inhaling menthol is to chew a crystal and then breathe through the mouth. ED.]

Wiener Klin. Rundschau, August 11.

Case of Poisoning With Nitrobenzol. V. SIMERKA.—As nitrobenzol is not dissolved by water or the stomach secretions, it remains unchanged for an interval—usually about half an hour—after its ingestion. Consequently, thorough

lavage of the stomach is indicated until the fluid aspirated is odorless. Alcohol and oils dissolve it and all substances containing them, such as milk, wine, etc., should be avoided. The fatal cases on record were not treated with lavage. In two of the published cases the symptoms of intoxication were apparent at once. The only constant symptoms are the odor of the breath and the cyanosis. The blood becomes brownish and the entire central nervous system is more or less affected, with various manifestations. The dose in the fatal cases was 150, 20 or 15 gm. Serious intoxication has followed ingestion of three drops and recovery has followed ingestion of as much as 30 gm.

Wiener Med. Blaetter, July 4 and 11.

Atropin in the Differentiation of Bradycardia. A. JOHANNESSEN.—Bradycardia may be caused by a direct or reflex irritation of the bulbar vagus center, or by some lesion of the automatic motor center of the heart in the myocardium. These primary causes can be readily differentiated by the subcutaneous injection of 1 mg. of atropin. In case the bradycardia is of intracardial origin, it continues unaffected by the action of the atropin. But if it is due to irritation of the vagus center, it is arrested by the atropin, as the latter paralyzes the heart-retarding apparatus—the terminals of the vagus in the heart. Several cases are described, with post-mortem discovery of sclerosis of a coronary artery in the cases in which the bradycardia persisted uninfluenced by the atropin. In the case in which the bradycardia was arrested by the atropin and the pulse increased at once from 45 to 110, fresh thrombosis was found in the left middle cerebral artery with softening of a portion of the internal capsule, the optic thalamus, etc. The heart was intact.

Ztft. f. Orthopaedische Chirurgie (Stuttgart), ix, 2.

Operative Treatment of Congenital Luxation of the Hip-Joint. A. CODIVILLA.—In cases in which the parts offer an obstacle to the reposition of the head of the femur, Codivilla levers the latter into place by an instrument shaped like a narrow, concave spade with a hook at the tip. It is inserted under the muscles and the capsular ligament until the hook fits over the anterior inferior spine, which affords it a solid support. The handle is then pushed downward, while the lower end of the femur is swung around to meet it. The combined leverage of the spade and of the lower end of the femur forces the head in the concavity of the spade, along into its normal position. If the complete absence of the acetabulum is the cause of the luxation, he remedies this by an extra-articular operation, detaching the capsule and taking a tuck in it, with freshening of the periosteum and ilium. If an incision in the capsule is necessary, he uses an instrument similar to König's mouth-opener to tear the capsular isthmus, supplementing it with the lever above described. The head of the femur must be left covered with its capsule, which will reduce the danger of ankylosis. The hip-joint should be opened up through an incision along the anterior margin of the tensor fasciæ latæ, continued upward along the iliac crest. The tensor fasciæ latæ and a portion of the gluteus minimus and medius is then detached from the ilium.

Gazzetta degli Ospedali (Milan).

Antituberculosis Serum in 1900-1901. MARAGLIANO.—THE JOURNAL has published from year to year Maragliano's reports of the results of treatment of tuberculous patients with his antitoxin. In the year closed in June, 130 out-patients were treated; 36 were clinically cured, including 17 with fever and destructive processes—with a cavity in 3; 58 were improved and the disease remained stationary in 31. In the remaining 5 the disease progressed. None of the advanced cases treated in the institute was cured. It is impossible for the antitoxin to cure without the assistance,—the re-enforcement of the organism. When the latter is unable to afford this assistance, the antitoxin is comparatively powerless. It is also unable to cope with the toxins from micro-organisms other than the tubercle bacillus. Maragliano has always maintained that tuberculosis is essentially a toxicosis—that the tubercle bacillus is harmful on account of the toxins it produces.

August 4.

Pathogenesis of the Disturbances From Helminthiasis. G. G. BATTISTA.—Four cases are described showing the various disturbances to which children with helminths are liable. In one, an acute intestinal catarrh with typhoid symptoms was accompanied by a diffuse bronchitis and was followed by death in twenty-nine days. In another, the only symptom was croup. After death from suffocation, an ascaris was found in the larynx and a bunch in the esophagus. Another child suffered from frequent, sudden bronchial attacks with fever, all symptoms vanishing after expulsion of a few ascarides. In another child a pneumonia, accompanied by fever and abdominal pains, rapidly subsided after expulsion of a few ascarides. The irritating action of the parasites in the intestines had probably irritated the peripheral fibers of the vagus and induced the bronchial spasms in these and other cases, or the relaxation of the pulmonary vessels in a bronchial catarrh or actual asthma. The irritation may be in the respiratory organs or in the respiratory center. There may be at the same time an intestinal autointoxication, induced by the mechanical action of the parasites, which may influence the vasomotor center or the local ganglia, inducing the angioneurotic disturbances. These assumptions would explain the epidemics of febrile asthma described by Bellotti, and the bronchial asthma from gastrointestinal autointoxication mentioned by De Dominicis, and also the development of pneumococcus infection from pneumococci vegetating harmlessly in the lungs until their latent activity is aroused by some—possibly slight—thermic, chemical or mechanical alteration in the tissues on which they are lying. The reflex irritating action of helminths in the intestines on the innervation of the pulmonary vessels, is similar to the effect of an external trauma on the thorax or the trauma of a surgical operation, which induces vasomotor disturbances and thus prepares the soil for the development of hitherto harmless pneumococci in the lungs.

Absorption by the Large Intestine. G. BARBIANA.—The large intestine has great absorbing power although less rapid than the stomach. Potassium iodid appears in the urine twenty minutes after injection into the large intestine, salol in forty-five, quinin in fifty, and chloroform and ether in sixty minutes. The influence of chloral is felt in ten minutes and apomorphin in four. The minimal fatal dose of a poison injected into the large intestine in animals kills them exactly as it does when taken by the mouth. Absorption is most rapid near the ileo-cecal valve and least rapid in the middle portion. The absorbing power can be increased by the mechanical action of water or by the chemical action of sodium sulphate. The latter stimulates the mucosa to increased function. The intestine does not absorb alimentary substances as well as it absorbs medicine. Even predigested foods are not absorbed in sufficient amounts to supply the needs of the organism except temporarily. The details of this research are given in the *Policlinico*, viii, C.

August 11.

Safe Limit in Operating on Veins. D. TADDEI.—Continuing his experimental research on suturing and lateral ligature of veins, Taddei considers himself justified in proclaiming that the amount of constriction which the veins will bear depends on their distance from the heart. It is possible to reduce the caliber of a vein by one-half, without ill results, if the vein is straight and not far distant from the center of circulation. But if at a distance, and if the conditions are unfavorable, as in the case of the femoral vein for example, the lumen is liable to become obliterated by a thrombus.

Iodipin Test of Gastric Motility. SCHUPFER has been experimenting with the iodipin test of the motor function of the stomach in Baccelli's medical clinic. He is impressed with its simplicity, facility and the general reliability of its results. He warns that icterus is a contra-indication, even for several days after the icterus has disappeared. By combining the iodipin and the salol tests it is possible in some cases to determine from the results obtained the permeability of the pancreatic duct.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 15 to 21, 1901, inclusive:

Earl S. Bullock, contract surgeon, leave of absence granted.

William H. Corbusier, major and surgeon, U. S. A., member of a retiring board convened at Governor's Island, N. Y.

G. Parker Dillon, contract surgeon, from Jefferson Barracks, Mo., to San Francisco, Cal., en route for service in the Division of the Philippines.

Charles R. Greenleaf, colonel, asst. surgeon-general, is detailed to represent the Superior Board of Health of the Philippine Islands at the meeting of the American Public Health Association, to be held in the city of Buffalo, N. Y., Sept. 16-20, 1901.

Alva R. Hull, contract surgeon, from San Francisco, Cal., to duty at Jefferson Barracks, Mo.

Richard W. Johnson, major and surgeon, U. S. A., member of a retiring board convened at Manila, P. I.

John S. Kulp, captain and asst.-surgeon, U. S. A., member of a board convened in New York City, N. Y., Sept. 24, 1901, to examine officers for detail to duty with the Ordnance Department.

Henry Lippincott, colonel, asst. surgeon-general, member of a retiring board convened at Governor's Island, N. Y.

Walter D. McCaw, major and surgeon, U. S. A., member of a retiring board at Manila, P. I.

Frederick H. Morhart, captain and asst.-surgeon, Vols., sick leave extended.

William E. Musgrave, contract surgeon, from San Francisco, Cal., to duty at the Army and Navy General Hospital, Hot Springs, Ark.

Louis A. Thompson, contract surgeon, leave of absence granted on account of sickness.

Edwin P. Tignor, contract dental surgeon, from Baltimore, Md., to duty at Fort Riley, Kan.

Allie W. Williams, lieutenant and asst.-surgeon, U. S. A., member of a board in New York City, N. Y., to examine officers for detail to duty with the Ordnance Department.

Robert N. Winn, lieutenant and asst.-surgeon, U. S. A., member of a board at Fort Riley, Kan., to examine officers for promotion.

Charles E. Woodruff, major and surgeon, U. S. A., member of a board at Fort Riley, Kan., to examine officers for promotion.

Appointments, Promotions, Retirements, Etc.,

Of Army Medical Officers recorded in the Adjutant-General's office, between July 15 and August 15, 1901. Previous notices of this character were published in THE JOURNAL of August 10, 1901. No appointment, promotion or other change in the status of medical officers of the Regular Army was recorded during the month. In the Volunteer Army the following were reported:

Appointments.—To be surgeon, with the rank of major: Ralph S. Porter, of Illinois; Robert Burns, of New Hampshire; Captain Vernon K. Earthman, asst.-surgeon. To be asst.-surgeons, with the rank of captain: George H. Calkins, of New York; W. Turner Wooten, of Maryland; Harry R. Lemon, of Illinois; Luther S. Harvey, of Florida; Michael A. Rebert, of Pennsylvania, and Henry du R. Phelan, of California.

Honorably Discharged.—Major Franklin A. Meacham, surgeon; Major Frank A. Artand, surgeon; Captain Thomas T. Jackson, asst.-surgeon; Captain Edwin P. Hayward, asst.-surgeon; Captain Compton Wilson, asst.-surgeon; and Captain Henry H. Rutherford, asst.-surgeon.

Commissions Vacated by New Appointments.—By Major Damaso T. Laine, appointment as major and surgeon, U. S. Vols. (act of Feb. 2, 1901); by Captain Vernon K. Earthman, asst.-surgeon, by appointment as major and surgeon, U. S. Vols.

Mustered Out of Service, Porto Rico Regiment.—Captain Jose Lugo-Vina, asst.-surgeon, and Lieutenant Simon Moret, Jr., asst.-surgeon.

Navy Changes.

Changes in the Medical Corps of the Navy, for week ending Aug. 24, 1901:

Asst.-Surgeon C. R. Burr, detached from the *Monongahela*, ordered home, granted leave of one month, and resignation accepted to take effect at the expiration of that period.

Medical Director T. J. Turner, retired, died at Mackinac Island, Mich., Aug. 20, 1901.

P. A. Surgeon D. H. Morgan, detached from Norfolk Hospital and ordered to the *Monongahela*, August 26.

P. A. Surgeon D. A. Carpenter, detached from the *Franklin* and ordered to the Norfolk Hospital.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service, for the seven days ended Aug. 22, 1901.

Surgeon H. R. Carter, granted leave of absence for fourteen days from Aug. 20, 1901. Leave of absence granted by Bureau letter of August 16 revoked.

P. A. Surgeon J. O. Cobb, granted ten days' extension of leave of absence.

P. A. Surgeon J. B. Stoner, granted leave of absence for seventeen days from September 2.

P. A. Surgeon G. B. Young granted eight days' extension of leave of absence from August 22.

Asst.-Surgeon L. D. Fricks, relieved from duty in the Philippine Islands, and directed to proceed to San Francisco, Cal., and await orders.

Asst.-Surgeon M. K. Gwyn, relieved from duty at Louisville, Ky., and directed to proceed to San Francisco Quarantine and report to the medical officer in command for temporary duty; thence to proceed to Manila, P. I., and report to the chief quarantine officer for duty.

Asst.-Surgeon T. D. Berry, relieved from duty at Cienfuegos, Cuba, and directed to proceed to Louisville, Ky., and report to the medical officer in command for duty and assignment to quarters.

Asst.-Surgeon Edward Francis, relieved from duty at the Immigration Depot, New York City, and directed to proceed to Washington, D. C., and report to the director of the Hygienic Laboratory for duty.

A. A. Surgeon W. R. Hicks, granted leave of absence for ten days from August 15.

Hospital Steward M. Walerius, granted leave of absence for seven days from August 1, under paragraph 181 of the regulations.

Hospital Steward R. F. Troxler, granted leave of absence for one month from August 20.

Hospital Steward J. E. Beck, granted leave of absence for three days from August 15, under paragraph 181 of the regulations.

Hospital Steward M. H. Watters, granted leave of absence for seventeen days from September 3.

BOARD CONVENED.

Board convened to meet in Philadelphia, Pa., Aug. 21, 1901, for the physical examination of an applicant for appointment as lieutenant in the Revenue Cutter Service. Detail for the Board: Surgeon H. W. Austin, chairman; Asst.-Surgeon J. S. Boggess, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Aug. 24, 1901:

SMALLPOX—UNITED STATES AND INSULAR.

California: San Francisco, Aug. 8-11, 2 cases.
Georgia: Pickens County, July 1-Aug. 10, 37 cases.
Illinois: Chicago, Aug. 10-17, 1 case.
Massachusetts: Boston, Aug. 10-17, 2 cases.
Nebraska: Omaha, Aug. 3-10, 1 case.
New Jersey: Jersey City, Aug. 11-18, 1 death; Newark, Aug. 10-17, 4 cases.
New York: Elmira, Aug. 3-17, 4 cases; New York, Aug. 10-17, 36 cases.
Pennsylvania: Aug. 10-17, Philadelphia, 6 cases, 1 death; Pittsburg, 2 cases.
Utah: Salt Lake City, Aug. 10-17, 4 cases.
Washington: Tacoma, Aug. 4-11, 1 case.
Philippines: Manila, June 22-July 6, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, July 27-Aug. 3, 1 case.
Belgium: Antwerp, July 27-Aug. 3, 1 death.
Colombia: Panama, Aug. 5-12, 7 cases.
France: Paris, July 27-Aug. 3, 8 deaths.
Great Britain: Glasgow, Aug. 2-9, 2 cases; Liverpool, July 27-Aug. 3, 1 case; London, July 27-Aug. 13, 1 death.
India: Bombay, July 16-23, 2 cases, 2 deaths; Calcutta, July 13-20, 6 deaths; Karachi, July 14-21, 1 case, 1 death; Madras, July 6-19, 16 deaths.
Italy: Messina, July 27-Aug. 3, 11 cases, 4 deaths.
Mexico: Mexico, Aug. 4-11, 1 case.
Russia: Moscow, July 22-27, 5 cases, 1 death; St. Petersburg, July 13-27, 3 cases.

YELLOW FEVER.

Colombia: Bocas del Toro, Aug. 6, 1 case; total cases to date, 8.
Costa Rica: Port Limon, Aug. 3-10, 4 cases, 2 deaths.
Cuba: Regla, Aug. 7, 1 case; San Antonio de los Banos, Aug. 8, 1 case.
Mexico: Vera Cruz, Aug. 3-10, 2 cases, 1 death.

CHOLERA.

India: Bombay, July 16-23, 10 deaths; Calcutta, July 13-20, 23 deaths; Madras, July 6-19, 2 deaths.
Japan: Yokohama, July 13-20, 1 case, 1 death.
Java: Batavia, June 29-July 6, 33 cases, 23 deaths.

PLAGUE—FOREIGN AND INSULAR.

Australia: Brisbane, March 1-April 30, 15 cases, 3 deaths.
India: Bombay, July 16-23, 107 deaths; Calcutta, July 16-20, 11 deaths; Karachi, July 14-21, 7 cases, 1 death.
Philippines: Cavite, July 6, 3 cases; Concepcion, July 6, 1 case; Malabon, July 6, 3 cases; Malolos, July 6, 6 cases; Manila, June 22-July 6, 43 cases, 18 deaths; Naic, July 6, 3 cases; Paranaque, July 6, 3 cases; Santa Rosa, July 6, 1 case.